AAWS Education and Training Stocktake
Production Animals/ Livestock - Pigs

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Disclaimer: This Education and Training Stocktake has been prepared by Scarlet Consulting and CM Communications to inform the Australian Animal Welfare Strategy (AAWS). The stocktake is a snapshot in time of the main opportunities for and approaches taken in Australia to education and training about animal welfare in each of the six AAWS sectors. It is not a complete and exhaustive list. It has primarily been developed through desktop research and consultation with AAWS stakeholders. The websites accessed for information were current at the time of final reporting in January 2008. This report does not reflect the views of AAWS or the Australian Government Department of Agriculture, Fisheries & Forestry. All care has been taken in the preparation of this report by the consultants but they do not guarantee complete accuracy for your particular purpose and therefore disclaim all liability for any error, loss or other consequence that may arise from you relying on it.

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Introduction to the Australian Pig industry

Pig production occurs in all states of Australia, with the highest proportion of producers located around the grain-growing regions. During 2005/06 Australia slaughtered 5.37 million pigs.

The national industry has approximately 2800 farms involved in pig production, with many more enterprises associated with the industry, such as veterinary services, equipment supply, feed companies, marketing and transport.

Around 3500 people were employed in the pig meat industry in 2001, largely in Queensland (27%), New South Wales (23%) and Victoria (21%), with a further 5000 employed in ham and smallgoods manufacturing.

Australia has 1999 pig breeding herds comprising 318,596 sows (ABS, 2004). According to the ABS the Gross Value of Production of the industry was worth $867 million AUD with more than 1900 pig producers. The pig industry is highly concentrated with 3% of piggeries in the control of 54% of the total sow herd, while smaller piggeries (with less than 50 sows) account for 65% of total piggeries for only 5% of the total sow herd.

<table>
<thead>
<tr>
<th>Pig breeding herds</th>
<th>No. of sows</th>
</tr>
</thead>
<tbody>
<tr>
<td>New South Wales</td>
<td>592</td>
</tr>
<tr>
<td>Western Australia</td>
<td>406</td>
</tr>
<tr>
<td>South Australia</td>
<td>353</td>
</tr>
<tr>
<td>Queensland</td>
<td>350</td>
</tr>
<tr>
<td>Victoria</td>
<td>241</td>
</tr>
<tr>
<td>Tasmania</td>
<td>55</td>
</tr>
<tr>
<td>Northern Territory</td>
<td>4</td>
</tr>
<tr>
<td><strong>Australia total</strong></td>
<td><strong>1999</strong></td>
</tr>
</tbody>
</table>

Source ABS 2004

New South Wales and Queensland contribute 55.7% of national pork production. Western Australia contributes 10.7% of pork production.

Welfare issues surrounding Pig Production

Revised Code of Practice

The Primary Industry Ministerial Council (PIMC) endorsed the revised Model Code of Practice for Welfare of Animals (Pigs) in April 2007.

The Code is intended as a guide for all people responsible for the welfare of pigs under both intensive and extensive systems. The Code emphasises that, whatever the form of husbandry, managers, and others responsible for the day-to-day needs of pigs have a responsibility to care for animals under their control. It details the responsibilities of those involved with the care of pigs, including their accommodation, food, water and special needs.

The revised Code was developed by the PIMC-appointed Animal Welfare Working Group in consultation with State, Territory and Commonwealth agencies, CSIRO, the veterinary profession, industry, researchers, retailers, processors and animal welfare groups. The revision process included extensive public consultation on the proposed changes.

The purpose of the Model Codes is to provide a foundation for animal welfare legislation, as well as promoting ‘good practices’. The new Code contains Standards, recommendations and guidelines aimed at ensuring good animal welfare outcomes for pigs under both intensive and extensive systems in all Australian jurisdictions. However, previous Codes have not been implemented or enforced in a...
consistent manner across the states and territories. Both the Australian Government, through its overarching Australian Animal Welfare Strategy and Australian Pork Limited (APL), on behalf of the industry, have worked hard in this review to try and ensure a more consistent approach results under the revised Code in 2007.

The revised Model Code of Practice improves standards of animal care and contains approximately 25 main changes from the previous Code, which dates back to 1998. Most of the changes broadly reflect current industry practice. However, an important change to the structure of the Code is the incorporation of explicitly stated Standards, which will be in force immediately from the date it is ratified in each State or Territory (expected in late 2007 or 2008). There are certain provisions that have lead-in times or related criteria.


The major challenge for the pig industry will be the implementation of the new Pig Welfare Code, which was released in April 2007. The major changes listed below will necessitate a robust education and training program to be developed in order for the industry to meet the new standards. An implementation group has been established to assist this process over the next two years.

New standards in Pig Welfare Code;
• The area of all new stalls will be increased.
• For pregnant sows there will be a maximum of 6 weeks (previously 16 weeks) confinement in stalls, after which they will be released into group housing situations with other sows, i.e. they will be only be allowed to be closely confined until they are mated and their pregnancy is confirmed. This protects them from aggression from other sows that can cause such early pregnancy to be lost.
• There will be a requirement for persons managing and conducting procedures on pigs to be trained or under the supervision of a person who is trained.
• Such persons will be required to inspect their pigs regularly and more often in hot conditions.
• Sows that are placed into crates to give birth (‘farrowing crates’, to protect piglets from being injured) must not be left there for longer than 6 weeks.
• Farrowing crate area is to be increased in all new installations.
• The use of any stalls or crates for boars and sows will require that they be appropriate for the size of the animal and allow them to stand and lie down without obstruction or injury. Boars must be released for exercise.
• Where there is any evidence of serious behavioural problems due to individual confinement in stalls, the animals must be examined by a qualified person and treated.
• Development of recommendations for keeping and confinement of pigs at free-range, including their shelter accommodation.
• A recommendation that pig farmers join their industry quality assurance management programs to provide improved welfare, high skill levels and greater market opportunity.

The timeframe for implementation of changes from the time of publication of the new Code is;
• 3 years for skills training of staff
• 5 years for pen size allowance increases, and
• 10 years to introduce the 6 week limit for use of sow stalls.

The industry is faced with an enormous task in terms of provision of development and delivering of relevant training programs and/or information materials. Assistance with this program would greatly enhance the implementation process.
Other specific welfare issues

Prior to the new Code standards being endorsed, the following issues\(^1\) have been individually identified as welfare issues. They are addressed in the new Code.

Farrowing and sow stalls

Sows are moved generally in groups to farrowing sheds approximately one week prior to giving birth and put in individual farrowing stall. Adjustable rails alongside the sow slow her movement when she lays down, thus protecting piglets from being crushed. Once the sow begins to farrow, the whole litter is born within 2 to 3 hours. Piglets are moved from the farrowing stall anywhere between 21 to 28 days depending on the producer’s system. The use of sow stalls is contentious in terms of animal welfare, due to the restrictions it places on the sow’s ability to move freely.

Castration

Australia is one of the few countries that does not routinely castrate all male pigs. Castration is done but it is the producer's decision. In some situations, castration is done to meet market requirements. Castration prevents the development of a number of undesirable flavour and odour characteristics of the meat that are rejected by consumers. Pigs that are not castrated are sent to market before they reach sexual maturity. Castration is recommended to be done between 2-7 days of age and involves cutting the scrotum with a scalpel or sharp knife to pop out the testicle, then by pulling on and cutting the spermatic cord first and then the blood vessel by pulling and twisting and then cutting by scraping up and down with the scalpel. No analgesics are used. An open wound is left to allow drainage.

Ear notching

Ear notching is one of a number of methods used to for the identification of pigs and as such is a necessary component of farm management on intensive production scale. It enables a producer to quickly identify the pig to monitor its growth rate. Livestock identification is also important to enable livestock to be traced if there is a disease outbreak - providing further assurance to our food quality. However, the new Code discourages it being undertaken, unless it is necessary. This is often done with a pair of sharp scissors and involves cutting to remove a small section of ear.

Teeth clipping

Teeth clipping is a practice to prevent injury to litter mates and udders of nursing sows. However, the new Code discourages it being undertaken, unless it is necessary. Teeth clipping is recommended to be done less than 7 days of age and involves using tooth clippers or pliers to remove the top quarter of the tooth. No blood should be drawn.

Tail docking

Tail biting can be a common problem in all production systems and the practice of tail docking is done as a preventive measure to reduce injuries. However, the new Code discourages it being undertaken, unless it is necessary. A sharp knife or scissors are used. The tail is held and cut quickly to leave about 16 mm. It is usually done at about 3 days of age.

Pig breeding and farming\(^2\)

There are a variety of production systems used in the Australian pork industry today.

In an intensive system, pigs are usually housed through their growth and reproductive stages indoors in specialised sheds. A shed housing pregnant sows is called a dry sow shed. Sometimes, dry sows may also be kept outdoors, but this is only possible in a limited number of situations where the climate is mild and soils are free draining. When she is ready to give birth, the pregnant sow is then moved to a special birthing or “farrowing” area where she remains with her piglets until they are weaned at between 21 and 28 days. Weaner pigs (weaned piglets) are kept in a weaning shed and finisher pigs are housed in a finishing shed. Most Australian pig farmers raise their pigs through the whole process in “farrow to finish” operations. (Note that there is a move to multi-site production systems.)

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2. Ibid.
Australian pigs are raised with a near disease-free status. This means that fewer medications are needed to keep pigs healthy. The high health status of Australian farms means that access of people and animals on to pig farms must be restricted to ensure that pig herds maintain their disease status. These restrictions are known as biosecurity precautions.

**Gestation**
Young, unbred female pigs are called gilts. A gilt is usually eight months old before she is mature enough for breeding. They are normally housed in groups of three to 25 pigs per pen in the breeding area. Gilts are called sows once they give birth. Male pigs, or boars used for breeding, are penned individually, so they don't fight with each other. Pigs are very social animals and sows are kept either in groups or individually in close contact with their neighbours. They do have a strong social hierarchy and sometimes fight amongst themselves to establish who is dominant or subordinate in a group situation.

When gilts or sows enter oestrus in their reproductive cycles (about 21 days long) they are ready to be bred. Farmers oversee breeding to ensure the sow is receptive and successfully bred.

Increasingly, producers are using artificial insemination (AI), which is gentle on the sows, eliminates disease risk and can produce excellent pregnancy results. Larger farms may rely exclusively on AI in their breeding programs.

Piggery managers keep records of sow and boar performance in a book or computer program. Pregnancy tests are conducted by ultrasound and, if found negative, sows return to the breeding area. The ability to pregnancy-test increases farm productivity.

Pregnant sows are called “dry sows” or “gestating sows” (non-lactating), and they may be moved to individualised stalls after breeding. Individual dry sow stalls assist in reducing stress to the sow during the early critical stages of pregnancy, although there is certainly an inability for the sow to properly exercise. In stalls, sows can easily be examined individually for their health and treated if necessary. Sows are fed individually and offered water regularly. They can lie down comfortably, stand up or sit and walk a few steps forward and back. The stalls are cleaned daily.

Sows may stay in stalls for a number of weeks, or the whole pregnancy. Farmers take care to minimise sow stress and to protect their sows from being jostled or injured by their herd mates during the first 30 days of pregnancy because of high risk of miscarriage. The length of the sow’s pregnancy is 3 months, 3 weeks and 3 days, or 115 days. Sows will usually have two litters of piglets each year.

**Farrowing**
Sows are moved to farrowing sheds approximately one week prior to giving birth. A farrowing stall provides creep areas along either side for the piglets. Adjustable rails alongside the sow slow her movement when she lays down, thus protecting piglets from being crushed.

Once the sow begins to farrow, the whole litter is born within 2 to 3 hours. The farmer keeps a close record of when piglets are born, and the number of piglets. Very shortly after birth, piglets will nurse. A heat lamp or pad and a warm farrowing room temperature ensures piglet comfort.

**Piglets**
Piglets are moved from the farrowing rooms at a weaning age which can be anywhere from 21 to 28 days depending on the producer’s system. The weaned piglets or weaners are housed in nursery pens. Farmers continue to provide very warm temperatures for the pigs. Weanlings are sorted by size or by sex and size and provided with fresh water and feed at all times. They will remain in nursery pens until they are between 5 to 10 weeks old. They will then be moved to a grower area.

**Growers/finishers**
Weaned and growing pigs are usually group-housed in pens of 5 to 200 pigs per pen. In well-ventilated sheds, pigs will instinctively select clean and dry areas for sleeping, resting and feeding. Pigs are very clean animals and choose to defecate in an area separate to their feeding area.
Transport
When pigs are market weight — from 60kg to 110kg — they are loaded onto well-ventilated trucks for transport to market. The number of pigs in the load is carefully calculated taking into consideration truck size, travel distance, temperature and pig comfort factors. Transportation of pigs follows the Model Code of Practice for the Welfare of Animals – Land Transport of Pigs.

Pig welfare and quality assurance
The Australian Pork Industry Quality program (APIQ) is the pork industry’s on-farm quality assurance program and covers product integrity, including food safety, biosecurity and animal welfare.

Incorporating animal welfare as part of quality assurance procedures ensures that maintaining animal welfare standards becomes a part of day to day on-farm management. The Model Code of Practice forms the basis for APIQ’s animal welfare component, so it covers:
- proper facilities to protect pigs against weather extremes and injury
- sufficient nutritious and palatable food and fresh water for pigs to maintain a healthy body condition
- staff training to ensure good stockmanship and care for sick and injured pigs.

APIQ has also developed three training manuals:
- ProHand for Stockpersons
- ProHand for Lairage Workers
- Managing Compromised Pigs.

If producers don’t comply with the Code guidelines, they are required to develop a timetable to address the issue.

As APIQ requires producers to undergo annual independent audits, APIQ enables producers to demonstrate that they are producing pigs in accordance with the industry’s best practice. Around 65% of the national herd is currently APIQ accredited.

The APL website states that “Animal welfare is of utmost importance to pig farmers, who have the same concerns you do when it comes to taking care of their pigs.” Australian pig farmers are leading the way in making positive changes in the way pigs are raised. According to APL the 18-minute educational video on Pig Welfare presents a balanced view of the real issues in the pig welfare debate.

Housing
Current housing systems are continuously evolving to improve efficiency, herd health and productivity. The pork industry has made a commitment to develop new alternatives and provide for increased welfare and comfort for their pigs.

Information from the Australian pork industry on sow housing can be found at www.sowstalls.com.au.

Housing systems for pigs from birth to weaning and for lactating and weaned sows are generally managed on an all-in all-out basis, keeping pigs of similar age within a common environment. There should be provision for the cleaning and disinfection of each section between each batch of pigs. This is a major component in disease control and hence good welfare.

The four main options for housing pigs are:
1. Indoor cement and/or slatted floored individual pens (note that only sows and boars may be housed in individual pens)
2. Indoor cement and/or slatted floored group pens with various individual or group feeding systems – partial feeding stalls, electronic feeding stations, trickle and floor feeding etc
3. Indoor large open-sided sheds, hoop-like structures, with deep litter flooring (rice hulls, straw, sawdust or similar), sometimes referred to generically as “deep litter housing” accommodating compatible groups of pigs. They are used extensively for growing pigs and for group housing of dry sows.

3 Australian Pork Limited www.australianpork.com.au
4. Outdoor paddocks, which include rooting areas, wallows, and kennels/huts for shelter (free range). These systems are only suitable for certain parts of the country and pose disease risks and a risk to the environment if not carefully controlled.

**Suitability of Outdoor Pig Farming in Australia**

The suitability of outdoor pig farming (sometimes called ‘free range’ pig farming) is restricted in Australia due to climatic conditions and soil conditions. Pigs run in free-range situations are vulnerable to climatic extremes and also a variety of disease and metabolic conditions. Certain weather and soil conditions make outdoor pig farming unsuitable for animal welfare or environmental reasons. Australia suffers extremes in climate and generally has poor soil, compared to parts of the world where outdoor pig farming is used.

APL maintains that the proposition that pigs should be forced outdoors under a free range system because this would be ‘welfare friendly’ are not based on a scientific assessment of the needs of Australian pigs but on an intuitive reaction to what ultimately is a sophisticated farming method that must meet stringent environmental requirements.

Australian Pork Limited (APL) does not support or prefer one form of pig farm production system to another. Rather APL is cognisant of the fact of the benefits and limitations of each system and seeks to work with the farmer, and the production system that secures the most sustainable outcomes for pig welfare and the environment.

**Animal care and health**

Australian Pork Limited has developed a lot of information for farmers on animal care issues to ensure the food they produce meets the highest animal welfare, health and food safety standards.

**Stockmanship**

It is recognised internationally that the most important factor for ensuring good animal welfare is stockmanship. This is a critically important part in the process of producing pigs and without proper training the process is compromised.

Stockmanship and handling is central to the training programs that APL has developed and has been running across Australia for many years.
Overview of relevant current and potential training and education activities

The main issues arising from the new Pig Code which are likely to require a significant industry commitment to expand existing and/or develop new training and/or education programs include:

- Practical training in husbandry procedures on pigs
- Development of technical information and/or training programs in assessing and treating behavioural problems due to individual confinement in stalls
- Development of technical information and/or training programs on free-range systems and group housing of sows.
- A recommendation that pig farmers join their industry quality assurance management programs to provide improved welfare, high skill levels and greater market opportunity.

<table>
<thead>
<tr>
<th>Issue</th>
<th>Training/Education Resources</th>
<th>Details</th>
<th>Limitations</th>
<th>Opportunities</th>
<th>Potential impact on Animal Welfare outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free range and group housing systems</td>
<td>Potential for Rural Training Package and veterinary curriculum materials to be developed.</td>
<td>Unsure what currently exists but probably limited to scientific papers.</td>
<td>May require further research to define key management aspects.</td>
<td>Development of technical manuals and integration of these materials into Rural Training Package as well as veterinary training would be of great benefit - to include behavioural assessment and treatment regimes.</td>
<td>Significant impact</td>
</tr>
<tr>
<td>Husbandry procedures</td>
<td>VET – Rural Training Production Package offered in Ag Colleges, TAFEs etc.</td>
<td>Unit of competency is (RTE2127A) Castration of livestock</td>
<td>Not sure if available as a discrete unit other than as part of Certificate courses in Ag. Also may need LOTE versions available to assist ethnic workers.</td>
<td>Specialist husbandry courses could be designed to assist with rapid up-skilling of pig industry workers.</td>
<td>High level of impact</td>
</tr>
<tr>
<td>Castration</td>
<td></td>
<td>No specific competency identified for this so probably incorporated into other existing competencies.</td>
<td>Unable to deem competent unless competency exists.</td>
<td>Need to develop specific competency for these</td>
<td>High level of impact</td>
</tr>
<tr>
<td>Tail docking and teeth clipping</td>
<td>VET – Rural Training Production Package offered in Ag Colleges, TAFEs etc.</td>
<td>Technical information outlining factors contributing to and preventative measures for alleviating associated problems.</td>
<td>Needs to be readily available</td>
<td>Access to this information may avoid the need to gain competency in tail docking and teeth clipping.</td>
<td>Very high level of impact</td>
</tr>
<tr>
<td>Potential new resources</td>
<td>Industry information sheets on husbandry procedures – not sure if they exist.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ear notching</td>
<td>VET – Rural Training Production Package offered Ag Colleges, TAFEs etc</td>
<td>Units of competency is (RTE2111A) Identify and mark livestock</td>
<td>Unsure level of promotion of ‘other’ methods for animal identification.</td>
<td>Promote other humane methods of identifying animals especially in VET system.</td>
<td>Moderate impact</td>
</tr>
</tbody>
</table>
### Animal Welfare

| VET – Rural Training Production Package offered in Ag Colleges, TAFEs etc. | Units of competency are (RTE2131A) Care for health and welfare of livestock (RTE3136A) Comply with industry animal welfare requirement (RTE4120A) Implement and monitor animal welfare programs. | Lack of resources and professional development on Animal Welfare. | Provision of professional development and more resources designed to engage agriculture students. | Significant impact on awareness of codes etc but only moderate impact on overall welfare outcomes and more long term |

### NOTE:

Appropriate stock handling including attitudinal behaviour is also an important welfare consideration. Stock handling programs which focus strongly on attitudinal behaviour (eg ProHand Pig) have been shown to have a major positive outcome on welfare. With the focus on skills and competencies, it would be useful to incorporate a practical component after participants had completed the Pro-Hand program.

In addition, the Australian Pork Industry Quality Assurance Program (APIQ) also includes animal welfare and specifically mentions the skills of stock handlers etc, but the nature of the staff training is not explicit.
Informal Education – Industry

**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.

APL’s primary funding is derived from statutory pig slaughter levies collected under the *Primary Industry (Excise) Levies Act 1999*. Additional research-specific funds are also received from the Commonwealth Government.

The APL website contains information on, and a link to, the Model Code of Practice for the Welfare of Animals (Pigs). It also includes Questions and Answers about the Code.

A lot of the information on the APL website is mainly geared towards producers, including a publication on ‘*Training Programs & Publications*’.

However, there is also information for consumers and information for the general public about pig welfare which includes a video.


**Free Range Pork Farmers Association**  

The Free Range Pork Farmers Association is a group of pork farmers whose production operations are considered free range. The Association has developed Standards which all members are expected to adhere to. Members farms are inspected for compliance.

The Association states that members’ free range pigs should be able to fulfil their basic behavioural and physiological needs by having the freedom to forage on the land. Their general movements are not to be hindered by cages, stalls, tethers or confined yards.

Pigs shall be:
- free to graze pasture during the day
- free to experience sunshine, wind and rain
- have access to clean fresh water and good feed
- free to express instinctive behaviour
- free of pain, discomfort and disease
- free from fear and distress
- protected from predators
- able to nurture their young
- free from hormones and antibiotics and growth promotants.

The Association’s website has a lot of information about what free range farming and information on members and where their products can be purchased.

**PigOut Campaign**  
The Association also promotes a campaign called PigOut [www.pigout.net.au](http://www.pigout.net.au), which promotes and encourages consumers to purchase free range pork and includes a survey about consumers’ understanding and attitudes to free range pork versus intensively farmed pork.
**Victorian Farmers Federation**

[www.vff.org.au](http://www.vff.org.au)

The Victorian Farmers Federation (VFF) is Australia’s largest state farmer organisation and represents 70% of farmers in Victoria. The VFF consists of an elected Board of Directors, a member representative Policy Council to set policy and seven commodity groups representing dairy, grains, livestock, horticulture, chicken meat, pigs and egg industries.

Farmers are elected by their peers to direct each of the commodity groups and are supported by Melbourne-based staff.

Each VFF member is represented locally by one of the 230 VFF branches across the state and through their commodity representatives at local, district, state and national levels. The VFF also represents farmers’ views on hundreds of industry and government forums.

Members of the Victorian Farmers Federation Pig Group represent more than 65% of the Victorian pig herd. The aim of the Pig Group is to provide a voice for Victorian pig farmers on political and industry issues affecting the pig industry.

The Pig Group provides pig producers with a voice on state issues such as codes of practice, animal welfare, environmental management, education and training. The Pig Group is also able to have input into national policy development and issues via Australia Pork Limited.

**New South Wales Farmers Federation**

[www.nswfarmers.org.au](http://www.nswfarmers.org.au)

The NSW pig meat industry produces 120,000 tonnes a year with a gross value of $267 million (30% of Australian production).

The NSW Farmers’ Association’s Pork Committee comprises six producers and represents all economies of scale from corporate to family farming. The issues of significance are the cost of inputs, regulatory costs and the price of meat.

**South Australian Farmers Federation Pork Committee**


The SA Farmers Federation (SAFF) Commercial Pork Section represents the interests of South Australian pig producers. The website includes information on current issues including as:

- EPA Separation Guidelines
- *Prevention of Cruelty to Animals Act 1985*
- Draft Australian Standards for the Land Transport of Livestock.

**Queensland Pork Producers Inc**

According to the Queensland Pork Producers (QPPI) database there are 230 pork producers in Queensland and a further 60 contract growers, whilst the total number of sows is approximately 65,000. QPPI is the organisation which represents the interests and needs of pork producers in Queensland.
West Australian Pork Producers' Association

The primary objective of the Western Australian Pork Producers (WAPPA) is to promote and safeguard the interests of pork producers in that State.

The WAPPA website has page called Pork Industry Training (WA), which has a useful list for people interested in training and education related to the pork industry.

Tasmanian Island Pork Alliance Inc. (TIPA)
No website
The sole pig industry representative body for the state is the Tasmanian Island Pork Alliance Inc. (TIPA), an incorporated association of the major pig producers in Tasmania. TIPA was established in 2002 to progress strategic objectives for the industry that were developed from the Pig Industry Review.

Model Code of Practice for the Welfare of Animals: Animals at Saleyards
A new Australian Code of Practice for the Selling of Livestock (including Guidelines for Structural Requirements) was due to be signed off as complete in November 2007.

The Australian Saleyard Code of Practice is a guide to aid saleyard operators in achieving the required standards for health, safety and welfare for the sale of all classes of livestock by auction at any saleyard within Australia. All persons directly involved with such sales shall be conversant with the Australian Saleyard Code of Practice. In addition, it is recommended that all saleyards should seek to be Quality Assured.

Saleyard Operators Association
www.saleyards.info

The Saleyard Operators Association has developed a web-based information source for members and people involved in the agriculture sector who want information about the operation of saleyards around Australia.

Saleyard Operators Accreditation Scheme Pilot Project
The Saleyard sector is coming under increased scrutiny due to the introduction of new regulations such as the National Animal Welfare Strategy and the quality assurance imperative relating to the sale of meat in both domestic and international markets. In order to help the industry meet these requirements the National Saleyard Quality Assurance Scheme (NSQAS) was developed.

In the past the sector has had a poor training culture and a lack of effective vocational training and assessment to support staff development and accreditation. Training and accreditation of operators will be an integral part of addressing the requirements of the NSQAS.

A Pilot Program, funded by the NSW Department of Education and Training Strategic Skills Program, is currently being run by TOCAL College, in consultation with the Agrifood Industry Skills Council and the Saleyard Operators Association of NSW.

The Pilot is developing a Draft Saleyard Operations Skill Sets and Qualifications and carrying out assessment for 15 candidates. If required, additional training will be implemented for saleyard staff at all levels. On completion of the pilot a broader program will be rolled out to provide skills assessment and training for all saleyard operators and staff across Australia.
National Saleyards Quality Assurance Program (NSQA)


The National Saleyards Quality Assurance Program (NSQA) was developed to underpin the National Standard for the Construction and Operation of Australian Saleyards. The NSQA Program is a transparent, independently auditable means of managing and assessing compliance with the Standard. The National Standard and the NSQA Program together provide the saleyard selling industry with a benchmark and a mechanism for maintaining the integrity of saleyards as an integral part of the livestock production and processing industry in Australia.

It has been recognised for some time that the marketplace is becoming more demanding of good performance and adherence to product specifications. These demands extend not only to product quality but also to food safety and environmental issues plus animal welfare and workplace safety. Over the past 15 years there has been a steady move throughout the livestock and meat industries to embrace the principles of Quality Assurance as a means of addressing the demands of the marketplace.

By becoming accredited under the NSQA Program, a saleyard is demonstrating that it is serious about product quality and integrity and the other issues that concern the market place. NSQA Accreditation is a commitment by a Saleyard to meet and maintain recognised national standards in the handling of livestock through all stages of the prime market and store/re-stocker market, Saleyard System.
Formal Education – Higher Education Sector

Bachelor of Veterinary Science courses

From 2008, there will be seven universities across Australia offering a Bachelor of Veterinary Science (University of Melbourne, University of Sydney, Murdoch University, Charles Sturt University, James Cook University, University of Queensland and University of Adelaide).

Today's Veterinary Science degree courses have a strong focus on animal welfare and the graduates from these courses are well equipped to show leadership in animal welfare matters.

University of Melbourne BVSc course

www.unimelb.edu.au

The University of Melbourne, Faculty of Veterinary Science has had a very close relationship with RSPCA Victoria since the Bachelor of Veterinary Science (BVSc) course was re-established in 1963. Since 1964, the RSPCA Burwood Shelter has provided extramural work experience for students in return for animal ambulance driving, and ferrying rescued animals to participating veterinarians for treatment, euthanasia, etc.

The introduction of a new BVSc curriculum at Melbourne in 1998 provided the opportunity to change the way animal welfare was taught starting from Semester 1 of the BVSc course. There have been six years of graduates (2001–2007) from this curriculum, and outcome assessments indicate that graduates are now better prepared to deal with animal welfare problems, and more informed and able to debate contemporary animal welfare issues, than graduates from the previous curriculum (1990–1997).

Note: Vet Science will become a graduate program requiring a 3-year undergraduate science degree under the New Melbourne Model. Refer to the new course content when available. The current course elements related to specifically animal welfare are outlined below.

Course content

The Melbourne BVSc curriculum is arranged within several frameworks. Key among these is the animal framework. The central focus in this framework is the management of animal health, welfare and disease. The work covers subjects that lead to the understanding of the normal and abnormal animal, how disease is produced, and how animals and their welfare are managed in the agricultural and companion animal industries worldwide.

First Year BVSc - Veterinary Professional Studies

Introduction to laws, ethics and morals, organisation of the veterinary profession and the management of animals in society. Learning is achieved through students working in syndicate groups, and presenting oral and written presentations. [Comparing and contrasting cultures and countries provide students with an international perspective for the rest of the curriculum].

Animal Health, Management and Welfare 1A and 1B

Practical classes are undertaken at the animal welfare shelters - dealing with shelter management, biosecurity, aggression tests, euthanasia of unsuitable animals, preparing suitable animals for adoption, educating the new owners.

Second Year BVSc - Animal Health, Management and Welfare 2A and 2B

Lectures on the codes of practice and the performance of the industries in responding to issues raised by animal welfare/rights/liberation groups. By the end of second year students will have completed two weeks of compulsory extramural work in an animal welfare shelter and submitted a report. Some students have worked in shelters in India, Texas, Hong Kong, China, Singapore and the UK.
Third Year BVSc - Professional Practice 1
Students can undertake up to four weeks of the required 12 weeks of extramural work with veterinary practices associated with animal shelters.

Fourth Year and final year BVSc - Professional Practice 2
Lectures on legislation, guidelines and codes.

Professional Practice 3 - Lecture-free electives
Three-week elective as a trainee veterinarian in a clinic associated with an animal welfare shelter. (RSPCA, Lort Smith Animal Hospital, Lost Dogs Home, Cat Protection Society)

The operations of the animal welfare shelters in Melbourne have changed since the students commenced the compulsory extramural work from 1998. In 2006 there were more veterinarians working in these organisations than in 1998, and the standard of veterinary care has improved.

One reason for changing the curriculum and involving all veterinary students with the animal welfare societies from the start of the BVSc course was to improve the relationship between the veterinary profession and these societies in Victoria.

University of Sydney Faculty of Veterinary Science
www.unisyd.edu.au

Veterinary Science at the University of Sydney is a five-year course that has a strong emphasis on animal handling skills, and includes teaching programs in a wide range of animal industries. Students spend 12 weeks on horse, pig, beef and dairy cattle, sheep, and poultry farms. These experiences develop competency in animal management. Classes in dog and cat handling are also included in the course. There is also a strong commitment to provision of opportunities for students to spend time in veterinary practices and these extramural links with practising veterinary surgeons are an important component of the BVSc program.

At the Faculty of Veterinary Science, University of Sydney, Associate Professor Paul McGreevy teaches a unit of study titled ‘Animal Behaviour and Welfare Science 3’ (Course code ANSC 3106). Animal Behaviour and Animal Welfare Science is the study of normal and abnormal behaviours in domestic and captive species. This is one of the core knowledge areas for veterinarians because it facilitates the recognition of disease states and helps veterinarians to make informed comment on animal welfare issues. The Unit of Study draws on knowledge of many aspects of animal husbandry, evolutionary biology and physiology, pharmacology and psychology. The course focuses on the importance of understanding learning theory and trainers' techniques and includes demonstrations from expert animal handlers and trainers.

The unit builds on the understanding of animal form and operation students have developed in prior units. In Animal Behaviour and Welfare Science the behavioural and physiological responses of animals to stressors related to husbandry, housing, training and performance are explored in some detail. This unit enables students to develop a three-dimensional appreciation of the species differences in response to common management interventions that arise in the context of domestication. The principles of animal responses to distress are illustrated with production species as the main examples.

Bachelor of Veterinary Science (BVSc)
5 yrs
First two years give sound grounding in basic biomedical sciences. Fourth year includes Bird Health and Production unit. Incorporates lecture-free year as 'intern' in university and commercial partner practices.
Murdoch University School of Veterinary and Biomedical Sciences
www.murdoch.edu.au

At Murdoch University's School of Veterinary and Biomedical Sciences animal welfare is initially presented as a discrete unit in first year. Subsequent to this, animal welfare is reinforced informally through various units in the remaining four years. As from 2008, a new veterinary program has been approved, with a general science year followed by a new five-year vet curricula.

**VET 106 Animal and Human Bioethics**

This is a core first year unit for veterinary students and is taken as an elective by other biomedical or biological science students. A variety of lecturers are given from both Murdoch staff and others off campus, for example, RSPCA, Perth Zoo and DAFWA. Tutorials include activities such as a formal debate and role playing as Animal Ethics Committee.

Topics covered by this unit include welfare assessment (five freedoms, physiological responses and behaviour), agriculture and animal production systems, public interest groups (RSPCA, animal rights groups, DAFWA culling programs), animals in society and companion animals (human-animal bond), conservation and wildlife (wild animal management) euthanasia and ethics at the end of life (religious slaughter), animal experimentation, animal use and education and ethical decision making in a vet clinic or laboratory.

**Non discrete units involving animal welfare themes**

Continual reinforcement of animal welfare themes is continued in various units in the latter years. For example: VET246 Animals and Society and VET401 Applied Veterinary Medicine.

The curricula proposed for 2008 includes:

- **ANS106 Animal and Human Bioethics** - retained structure as VET106 above – still a core unit for veterinary students
- **VET 242 Animal Systems I** - includes analysis of animal welfare in animal production systems (intensive and extensive systems)
- **VET 342 Animal Systems II** - includes more detailed animal welfare topics concerning both companion animals and farm animals. Animal welfare topics will constitute approximately 10 lectures. Topics such as human animal bond, welfare aspects of breeding and showing, implications of neutering programs, responsible pet ownership, and the relationship between animal abuse and human abuse. Farm animal topics will include welfare assessment on farms, principal welfare issues like husbandry procedures, mutilations, and transport and welfare effects of stockmanship
- **VET 442 Animal Systems III** - will include welfare aspects of slaughter, disease control and epidemiology
- **Veterinary Medicine and Surgery I and II** - earlier themes of animal welfare will be expanded as students focus on the prevention and treatment of disease in clinical setting.

**Murdoch University, Human and Animal Bioethics unit**

This unit offers students the opportunity to investigate the scientific and ethical justifications for using animals in agriculture research, education, recreation and as companions. It also covers the key aspects of the reproductive technologies and genetic engineering for both humans and animals. Other topics include the role of animals in society, euthanasia, and our responsibilities in the management of wildlife and in the advancement of genetic technologies. Students may direct their studies to the animal, human or biotechnological areas.
Charles Sturt University  

Bachelor of Veterinary Science  
6 yrs  
The Veterinary Science course at Charles Sturt University's Wagga Wagga campus commenced in 2005, with the enrolment of the first 45 students.

Veterinary Science at CSU arose from the need for more veterinarians who want to live and work in regional Australia and who have the knowledge and skills to work with a broad range of animal species from farm livestock to horses, companion animals and wildlife.

James Cook University  
www.jcu.edu.au

Bachelor of Veterinary Science  
5 yrs  
Since 2006, James Cook University's School of Veterinary and Biomedical Sciences has offered the Bachelor of Veterinary Science. Students acquire the knowledge and skills to diagnose, treat and prevent disease in a wide range of animals, including farm animals. In addition, students will acquire a thorough knowledge of animal production systems. Final year of the course is devoted to clinical and professional training and is delivered in a series of clinical rotations through veterinary hospitals, practices, laboratories and government agencies in Mackay, Townsville, Cairns, Charters Towers and Malanda.

Griffith University  
www.gu.edu.au

Bachelor of Veterinary Science  
6 yrs  
Particularly geared towards working in the farm animal industries, this degree providing a solid grounding in agricultural production systems and the integration of nutrition, genetics, economics and epidemiology into the management of herds and flocks. The course recognises the role of vets in ensuring the safety of animal products for human consumption and the welfare of animals in livestock production systems.

University of Queensland  
www.uq.edu.au

Bachelor of Veterinary Science  
5 years  
This program is concerned with the promotion of the health and welfare of vertebrate animals of special importance to society. This involves the care of healthy and sick animals and the prevention, recognition, control and treatment of their diseases, and the welfare and productivity of livestock. First year courses provide a foundation knowledge of animal structure and function, chemical principles, and animal husbandry. The structure and function of the normal animal, and its nutrition, breeding, and management, are studied in greater depth in second and third years. Fourth and fifth year students develop knowledge and skills in the prevention, diagnoses, treatment and control of diseases in domestic animals and birds. All years of the program contain a large component of practical work.

First year subject - Animal Handling, Behaviour and Welfare for Veterinary Students
University of Queensland Centre for Animal Welfare and Ethics (CAWE)
www.uq.edu.au/cawe

The Centre for Animal Welfare and Ethics (CAWE) aims to improve understanding of animal welfare, and ethical issues concerned with animal welfare, through research, teaching, legislation and training.

Animal Welfare is increasingly attracting attention worldwide. It is becoming increasingly recognized that housing an animal in an environment designed to maximize its sense of ‘well being’ is integral to the physical health, psychological health and reproductive capability of animals kept for many purposes including conservation, companionship and research. Due to this growing recognition of the importance of animal welfare, The Centre for Animal Welfare and Ethics (CAWE) was established at UQ and consists of a team whose purpose is to develop innovative practices, guidelines and management strategies to protect animals, enhance their health and ensure that the five standard freedoms of animal welfare are met.

The CAWE, in conjunction with the School of Veterinary Science, is presently aiming to increase welfare for animals kept for companionship, those used in both intensive and extensive animal industries, the CAWE is also involved in suggesting refinement techniques for handling livestock and are working to increase the welfare of animals housed for conservational purposes and research.

Veterinary Education and Information Network (VEIN)

The teaching of animal welfare and animal welfare science is further supported by the University of Sydney Veterinary Education and Information Network (VEIN), which was launched in 2001. VEIN features pages devoted to animal welfare, alternatives and ethics with links to sites dealing with:
- Animal welfare information gateways
- General resources
- Guidelines and issues
- Organisations and government bodies
- Alternatives to animal use in teaching and research
- Environmental enrichment
- Production animal welfare
- Laboratory animal welfare
- Resources to reduce or replace animal use in teaching and research
- Animal rights
- Animal welfare essays.

In addition it has numerous pages devoted to a complete range of veterinary interests which would have partial interests in both animal welfare and animal welfare science including:
- Pain
- General resources
- Laboratory animals
- Non-laboratory animals
- Human resources
- Organisations
- Recommended research databases and indexes.
Postgraduate Courses

University of Melbourne, Faculty of Land and Food Resources
www.landfood.unimelb.edu.au

The Animal Welfare Science Centre, within the Faculty of Land and Food Resources, offers a Masters of Animal Welfare (Research) and PhD programs in Animal Behaviour and Welfare. In addition, from 2009 the Centre will teach core subjects for the Postgraduate Diploma in Animal Welfare and the Masters in Animal Welfare by Coursework, at the University of Melbourne.

Graduate Certificate in Animal Welfare (Monash University)
www.animalwelfare.net.au

The Department of Psychology at Monash University offers the Graduate certificate in Animal Welfare (GAW) as a fourth year certificate. The course is taught in the off-campus learning mode and students are required to attend a one-day on-campus workshop per unit. The GAW offers professionals the opportunity to further their education and personal development in the area of animal welfare. The course aims to provide valuable and relevant training in animal welfare issues for people working in areas of animal husbandry, animal training and veterinary care, and to provide graduates with knowledge and skills necessary to manage the ethical, biological, behavioural and human challenges relevant to animal welfare issues. The GAW is currently being reviewed.

University of Adelaide
www.adelaide.edu.au

The National Centre for Pork Industry Training and Education (NCPITE) has negotiated with the University of Adelaide to offer post-graduate degrees in pig science and management from July 2008. This is to be set-up on a 6-, 12- and 18-month course, which progressively awards a post-graduate certificate, diploma or masters degree.

Post-Graduate Foundation in Veterinary Science, University of Sydney
www.pgf.edu.au

The Post-Graduate Foundation in Veterinary Science of the University of Sydney formed in 1965. It was established to fund continuing education for the profession and over time the activities have been expanded to cover a range of different services. The Foundation's initiatives include regular refresher courses (2 to 5 days duration), along with publishing, technical information search and dissemination, and distance education.
Undergraduate Courses (other than Veterinary Science)

University of New England
www.une.edu.au

**Diploma in Agriculture (DipAgr)**
2 yrs
Provides graduates with a broad knowledge of agriculture so that they are able to contribute effectively to sustainable agricultural production in technical and support roles. The program is divided into three streams of Plant, Animal and General agriculture.

**Advanced Diploma in Agriculture (AdvDipAgr)**
3 yrs
Develop the skills, knowledge and technology needed to work in agriculture and primary industries sector in technical and managerial roles. Designed for people who hold a relevant diploma or who have relevant professional experience. Can be used for articulation into Bachelor of Technology or Agriculture. Opportunities for 8 weeks practical work experience.

**Bachelor of Livestock Science (BLivestockSc)**
4 yrs
This degree provides scientific training for a wide range of careers associated with the livestock industries. Specialist streams include: Animal breeding and genetics with subject options in quantitative genetics, molecular genetics and/or bioinformatics; and Animal health and nutrition (with a Pig option).

**Bachelor of Agriculture (BAgr)**
3 yrs
An industry-orientated course providing vocational training with an applied and hands-on education. Specifically designed to produce agricultural managers with wide practical knowledge and experience. Includes Animal stream with set first year and wide range of electives in second and third years.

**Bachelor of Rural Science (BRurSc)**
4 yrs
Covers basics of agricultural/animal production, agricultural economics and management. Includes 24 weeks of practical work experience. Students benefit from world class facilities and staff of CRCs (UNE is a major participant). Curriculum for first 3 years is fixed, with opportunity to complete a research project in 4th year.

**Bachelor of Technology (BTech)**
5 yrs
A cooperation between the Sciences Faculty and NSW TAFE: specifically designed for part-time external study, allowing students to seek employment on the basis of their Diploma and gain a Bachelor degree at the same time. Offers seven course work streams, including Agriculture, which articulate from specified TAFE Diplomas.

University of Queensland
www.uq.edu.au

**Diploma in Applied Science (DipAppSc)**
2 yrs
Trains students in broad areas of a chosen field so they are able to contribute to efficient, sustainable animal/ agricultural production in technical and managerial roles, or in the management/utilisation of marine, forestry and environmental resources. Includes at least 30 days industry practice work in two or more approved positions.
Bachelor of Applied Science (BAppSc)  
3 yrs  
Flexibly structured program provides students with ability to apply mix of scientific; technical and managerial skills in areas such as: Animal Behaviour, Welfare and Control; Animal Production; Animal Science; and Animal and Plant Biosecurity.

University of Melbourne  
www.unimelb.edu.au

Associate Degree in Agriculture  
2 yrs  
Provides students with a wide range of practical and up to date farming skills. Graduates will achieve an understanding of the biological and ecological aspects of farming systems which will lead to sustainable agriculture, as well as financial skills to enable successful management of any medium-sized business related to agriculture or its service industries.

Bachelor of Agriculture (final intake 2007)  
3 yrs  
Gives broad knowledge of fundamental science across a range of disciplines, with a high level of achievement in areas such as animal management and production. Disciplinary sequences include: Agricultural Economics and Business; and Animal Management and Production Science.

Bachelor of Agricultural Science (final intake 2007)  
3 yrs  
Gives broad knowledge of science across a range of disciplines. Students can combine study areas to prepare for careers in the agri-food industries, taking subjects from other degree courses within the Faculty of Land and Food Resources or choosing electives offered by Faculties of Arts; Economics and Commerce; Engineering; and Science.

Bachelor of Agricultural Science/ Bachelor of Commerce (final intake 2007)  
5 yrs  
Provides an understanding of the businesses and activities within the food and fibre industries. Covers theoretical concepts and tools from economics, agricultural sciences, business management and marketing for analysing and communicating solutions to problems in agribusiness, natural resource use or agricultural policy. In fourth and fifth year students can choose to specialise in specific area.

Bachelor of Animal Science and Management (final intake 2007)  
3 yrs  
Provides an understanding of animals, their biology and ecology, their management in natural and farm production systems and as companions to humans. Also provides grounding in the technical, ethical and welfare considerations attached to human-animal interactions.

Bachelor of Science (New Generation Degree, 2008 onwards)  
3 yrs  
Gives broad knowledge of science across a range of disciplines. Students can combine study areas to prepare for careers in science, including animal science and management, pre-veterinary science and agriculture. Students can also take subjects across the university.

Animal Welfare Science Centre Undergraduate Contributions  
In addition, the Animal Welfare Science Centre, within the Faculty of Land and Food Resources, offers a stream of subjects in animal behaviour and welfare open to all undergraduate students that can be taken as part of a broadening stream of subjects within the New Generation Degrees.
University of Sydney
www.usyd.edu.au

Bachelor of Animal and Veterinary Bioscience (BAnVetBioSc)
4 yrs
Provides an excellent path to careers in the animal industries, and animal and biomedical research. Involves studies in the structure and function of animals, their management and welfare in an agricultural, para-veterinary, laboratory or wildlife context. Gain specialist research skills in Fourth Year through the completion of a research project.

University of Western Sydney
www.uws.edu.au

Bachelor of Agriculture
3 yrs
Equips graduates with specialised knowledge and understanding of balance between agriculture, landscape ecology and business activities. Employment opportunities include: animal health and welfare; agricultural marketing/education; rural enterprise management (farms or agribusiness); and livestock industries. Includes industry-based project work.

Charles Sturt University
www.csu.edu.au

Bachelor of Rural Studies
6 yrs P/T
This degree addresses social, economic and environmental sustainability of rural communities. The course provides an understanding of overall operation of business/organisation, particularly for accountability and strategic planning purposes. Includes core area of agricultural and environmental management with subject on livestock production systems.

James Cook University
www.jcu.edu.au

Bachelor of Tropical Agricultural Science
3 yrs
Provides graduates with knowledge of issues involved in sustaining the productivity of the land, while preserving its environmental integrity. Subjects include: Animal Biology; and Physiology and Pharmacology for Veterinary Science and Agriculture. Honours consists of development of personal research project and thesis.

University of Queensland
www.qu.edu.au

Bachelor of Veterinary Technology
3 yrs
This course prepares students for employment in areas such as: animal health and welfare (domestic, production animals and wildlife), government, research institutions, veterinary practice and veterinary nutrition and pharmaceuticals. The first two years are completed at the university’s Grattan campus with a focus on production animal studies. The final year is undertaken at the School of Veterinary Science at the St Lucia campus with subjects including:
- clinical aspects of small and large animal health including vet pharmacology and therapeutics
- veterinary anaesthesia support techniques.
University of Adelaide
www.adelaide.edu.au

Bachelor of Agriculture
3 yrs
Provides training and practical experience in all aspects of agriculture including agricultural applications, marketing, financial management and business studies. Third year allows for specialisation in livestock production. Focus on development of practical and managerial skills required to operate a farm.

Bachelor of Science (Agricultural Science)
3 yrs
Provides an understanding of how science and technology underlie modern agricultural practices and how they relate to the sustainable use of natural resources. Opportunity to specialise in area relevant to agriculture and resource management (eg. livestock sciences).

Bachelor of Science (Animal Science)
3 yrs
Offers broad range of animal science courses, including livestock species. Students undertake foundation science courses that form background for studies in animal physiology, nutrition, breeding and management. Strong emphasis on practical skills utilised in area of animal science. Also provides good preparation for Veterinary Science studies.

University of Western Australia

Bachelor of Science (Agriculture)
3 yrs
This degree prepares graduates for a career in research, management or extension in many areas of agricultural science. The Animal Science subject teaches students to understand basic physiological functions of animals; appreciate the adaptation of animals to their environment; improve communication and laboratory skills; and develop basic animal-handling skills. This unit begins with concepts of the behaviour and welfare of animals because society now demands that students be thoroughly trained in these areas.

Bachelor of Animal Science
3 yrs
There is a wide range of employment opportunities for graduates in animal science including the fibre, agricultural, food, biomedical science, fisheries and pastoral industries. Core subjects include units in: Animal Science, Animal Nutrition, Animal Ethics and Welfare.

Curtin University

Bachelor of Agribusiness
4 yrs
This course offers majors in Aquaculture, Aquatic Resources, Farm Management, Agribusiness Marketing, Equine Management, Horticultural Management and Viticultural Management. The focus is on developing skills in the management and optimisation of systems to achieve profitable and sustainable outcomes. The course takes a holistic view of agribusiness, developing an understanding of linkages between consumers and the production, processing and distribution systems management associated with these industries. Professional development is enhanced during a period of 12 to 16 weeks in professional practice spent in an agribusiness organisation in Australia or overseas.
Murdoch University

Bachelor of Animal Science
The Bachelor of Animal Science Degree (BAnimSci) at Murdoch University is a four-year degree with Honours. Animal Science is the study of animals in agriculture aimed at efficiently increasing food production in an environmentally sustainable, innovative and ethical manner. The animal science course offers a modern educational approach to livestock production designed to equip graduates with the knowledge and skills appropriate to the needs of professional agricultural scientists.

The BAnimSci requires in-depth study of a range of fundamental subjects in animal biology applied to livestock production, combined with other complementary disciplines in chemistry, statistics, and economics. The first 3 years of the course are specified to ensure that all students cover the core knowledge for animal science. Industry skills are gained through the stream of animal production systems in the first three years. In Year 4, students undertake an animal science research project that will form the major part of their Honours assessment. In addition, 4th-year students can pursue their interests in specialities with increased flexibility through a choice of elective units. Before graduating, students must complete four weeks of approved work experience in an agricultural setting.

Animal Welfare Science Centre
www.animalwelfare.net.au

The Animal Welfare Science Centre is a partnership of the University of Melbourne, Monash University and the Department of Primary Industries (Victoria). The Centre was established to focus and coordinate research and academic resources of the three collaborating organisations, providing the animal industries, animal users, farming communities, Government and the academic and general community with an internationally competitive research, training and teaching resource in animal welfare science.

The Centre has a strong Research, Development and Education Program and conducts animal welfare research and development within four major program areas:

Program 1: Animal welfare methodology
Animal welfare assessment is a contentious topic in animal welfare science: assessment of animal welfare is a complex task and scientists differ in their views on how animal welfare should be judged. An important focus of the Centre is the improvement in the methodology to assess animal welfare.

Program 2: Housing and husbandry effects on animal welfare
Confinement of animals and painful husbandry procedures are controversial issues for many in the general community and the Centre has a number of research projects studying some of these most controversial issues for farm and companion animals. Current programs include evaluation of enrichment and handling programs for dogs in kennels and shelters, the importance of nests for the welfare of laying hens, floor space for breeding pigs in groups and alternatives to mulesing of lambs.

Program 3: Attitudes to animals and animal welfare, and farmer, consumer and community behaviour
Human behaviour significantly impacts domestic animals both directly and indirectly. The Centre's research has highlighted the effects of inappropriate attitudes and handling during production and slaughter on the fear and stress responses in livestock and this knowledge has been utilised to develop training programs targeting those farmer attitudes and behaviours that seriously limit animal productivity and welfare. The Centre is also conducting research on the relationships between public and consumer attitudes and a range of community and consumer behaviours. Reliable and valid measures for monitoring public and consumer attitudes to animal welfare are required to assist in establishing research, education and regulatory policy in animal welfare.

Program 4: Tertiary and post-graduate education and training
Outputs of this program which are of particular interest to the dairy industry are ProHand Pig (a validated program which targets stockperson attitudes and behaviours) and the Dairy Industry
Education Program which is an interactive multimedia educational resource giving senior primary and junior secondary students the opportunity to be actively engaged in learning about dairy farming. The program has been written for all curricula in Australia. ProHand for Pigs has been very successful in WA with a significant number of industry workers having undertaken the program. In addition, DAFWA provides ProHand training to workers in pig abattoirs.

**Current research projects include:**
- Behavioural and physiological measures to identify fundamental animal welfare requirements
- Physical and social requirements of animals
- The effect of human-animal interactions on the welfare of animals
- The role of human contact in reducing the aversiveness of routine husbandry practices
- The use of selection tools to evaluate desirable animal handler characteristics
- Teaching and training programs in animal welfare, livestock handling and for scientific graduate and post-graduate programs
- Teaching and training programs for industry and animal carers.

**Undergraduate subjects on Animal Welfare (University of Melbourne)**
- Animals In Society – 1st year core unit for ‘Bachelor of Animal Science Management’ and elective for all other science courses.
- Applied Animal Behaviour Science - 3rd year unit for ‘Bachelor of Animal Science Management’
- Animal Welfare and Ethics – 4th year unit.

From 2008 all three subjects will form a stream of broader units, under the new generation degrees, designed to inform student about animals and human society, animal behaviour and animal welfare and ethics.

**Graduate Subjects on Animal Welfare (University of Melbourne)** - available from 2009 as core units in the Masters in Animal Welfare by Coursework or electives in the Masters of Animal Science by Coursework Programs
- Advanced Applied Animal Behaviour
- Advanced Animal Welfare

**Public Education**
Targeting human-animal interactions to improve animal welfare and productivity (research article: human-animal interactions). Two of the AWSC Training Programs are ProHand Pigs and ProHand Dairy stockpeople (see Industry extension programs). Currently, ProHand Pig Abattoir, and ProHand Red Meat Abattoir are under development.

**The Werribee Farrowing Pen (A special project)**

The Werribee farrowing pen was developed from basic research investigating the role of the environment, and maternal and neonate behaviour on piglet survival, conducted at the DPI. The research was jointly funded by the Department of Primary Industries and the Pig Research and Development Corporation. Some of this research has been reported in Cronin *et al.* (1996).

The Werribee farrowing pen is a "loose" farrowing pen designed to address the behavioural requirements of both the sow and new-born piglet within the same small space. The pen consists of two compartments, (1) a nest area which is attractive to the sow as the preferred place to give birth (farrow), and (2) a dunging and feeding area. The nest area contains built-in design features to promote piglet survival, such as bedding, a small floor area and heated safety zones away from the sow. The recommended form of bedding is whole rice hulls.

**ProHand Pigs**
Animal Welfare Science Centre (in collaboration with Australian Pork Limited) has developed the ProHand multimedia training program which contains the key elements necessary to improve the
attitudes and behaviours of stockpeople. Multimedia training programs offer instructional consistency, good retention and high motivation amongst participants.

The programs are presented via the combination of interactive CD-Rom, video and group discussions facilitated by a qualified trainer. The computerised component allows small groups of stockpeople to individually undertake the program in a non-threatening setting and to progress through the modules at their own pace, with opportunity to review progress. The CD-Rom includes a series of reviews and discussions on experimental and field-based research, with video footage identifying both appropriate and inappropriate behaviours by stockpeople towards animals and the consequent animal fear responses. Recommendations on achieving and maintaining attitudinal and behavioural change are also provided. Group sessions provide an opportunity for discussion of the important issues related to achieving these changes when handling animals.

**Background**

Human-animal interactions are a common feature of modern intensive farming systems. However, these interactions may have serious consequences on animal productivity and welfare. The behaviour of a stockperson towards their animals is largely influenced by the attitudes of the stockperson. These attitudes and consequent behaviours predominantly affect the animal's fear of humans which, in turn, affects the animals performance and welfare.

**Benefits of using multimedia training programs in the pork (and dairy) industries**

Properly applied, ProHand (Pigs) provides the capability to improve the attitude and behaviour of most stockpeople towards their animals. For example, research in the pig industry to examine the effect of the program has shown that by changing attitudes and behaviour through ProHand, the fear responses in pigs are consequently reduced, resulting in improvements in pig reproductive performance by, on average, about 7%.

**CSIRO Livestock Industries**

[www.csiro.au/pubgenesite/research/animals/pigs_final1_short.htm](http://www.csiro.au/pubgenesite/research/animals/pigs_final1_short.htm)

**Improving pig welfare**

CSIRO is helping pig producers develop animals that are disease resistant and better adapted to farming, and so improving their health, welfare and productivity. The current activity is research focussed rather than educational.

**Pork Co-operative Research Centre (CRC)**


The research and development programs of the CRC for an Internationally Competitive Pork Industry (Pork CRC) aim to result in the following outcomes:

- Reduced production costs for high-quality pork through more reliable and consistent protein and energy supplies via innovative grain production, co-product utilisation and quality assessment.
- Reduced production costs for high quality pork through improved herd feed conversion efficiency.
- Increased demand for high-quality, niche Australian pork products as a result of enhanced capacity to deliver nutrients that promote the health and well-being of consumers via consumption of pork and pork products.

The Pork CRC has an extensive collaborative network of researchers, educators and support staff from 25 participating organisations.

**Pork CRC Education and Training Program**

The Pork CRC Education and Training Program is tailored to deliver education and training consistent with specific characteristics of the Australian pork production sector.

This program builds on the established infrastructure for education and technology transfer within the industry to develop the human resource capital necessary to sustain and further develop the pork industry. The major elements of the Pork CRC Education and Training Program involve formal training
opportunities to attract new entrants to the industry and retain expertise and innovation. The key elements of the program include:

**Secondary schools**
Development of relevant course material for agriculture and related subjects in secondary schools, via the National Centre for Pork Industry Training and Education (NCPITE) using outputs from the Pork CRC.

**Tertiary undergraduates**
Summer scholarships for near-final year students for work experience within companies (Undergraduate Industry Awards) or for research experience and/or honours projects on CRC research projects (Undergraduate Research Awards) and development of relevant course material for tertiary agricultural, rural and veterinary science courses, and related subjects, via the NCPITE incorporating Pork CRC outputs.

**Postgraduates**
Development of an external coursework-based MSc program through the NCPITE, based on the modular structure of the Australian Rural Leadership Program, designed for both research and commercial career paths, PhD and co-funded industry-based MSc scholarship programs in the fields of pig nutrition, reproduction, genetics, and pork quality with intakes of three cohorts of 4–5 PhD and 1–2 industry MSc students (full scholarships + 'top-up' scholarships) in 2006, 2007 and 2008, and development of postdoctoral scholarships to increase retention rates of promising young scientists in the pig industry. Other areas will include professional refresher courses (typically 1–5 days) for pig veterinarians (supporting the new VetEd scheme for continuing education - currently voluntary), nutritionists and technical managers, exploring video-conferencing and distance learning options.

**Pig producers and employees**
Short knowledge-development courses to support life-long learning (LLL) initiatives for managers to provide a structured 'ladder of learning' for industry participants. These courses are delivered through the use of web and telephone conferencing.

**National Centre for Pork Industry Training and Education (NCPITE)**
www.nationalporkcentre.com.au

The *2007 Revised Australian Model Code of Practice for the Welfare of Animals (Pig)* guides what is acceptable practice for the management of pigs. There is a requirement in the Code for persons managing and conducting procedures on pigs to be trained or under the supervision of a person who is trained.

The National Centre for Pork Industry Training and Education (NCPITE) was developed to provide quality training and education delivered by motivated people, to greatly enhance recruitment and retention into the Australian pork industry. Australian Pork Limited and the Pork CRC fund the centre.

**PIGED Teaching Resources**
A free CD-based resource package to assist secondary school agriculture/science teachers in delivery of pig-related and basic science courses to year 8-12 students. The package consists of the following:

- An introduction (for teachers explaining how to use the package)
- Eight teaching modules, each containing 3 teaching components
- Learning notes (lesson equivalents)
- Classroom activities
- Individual, hands-on and small group assignments
- A virtual piggery
- A pork careers glossy booklet.

**PIG TRAIN**
A free CD-based resource package with pig-related competencies for Certificates II and III of the Rural Production Training Package.
Training Packages are a key feature of vocational education and training in Australia. They are part of the National Training Framework that aims to make training and regulatory arrangements simple, flexible and relevant to the needs of industry.

Training may occur at the workplace, off the job, at a training organisation, during regular work, or through work experience, work placement or work simulation. Usually it involves a combination of these methods, depending on what suits the learner and the type of learning and particular vocational outcome.

Australians can achieve vocational competency in many ways. Training Packages acknowledge this by emphasising what the learner can do, not how or where they learned to do it. For example, some experienced workers might be able to demonstrate competency against the standards and gain a qualification without completing a formal training course.

**PigLife**

PigLife is the area of activity of the NCPITE that offers those people already involved in the Australian pork industry the opportunity to continue to learn about their business. In particular, PigLife is designed to provide ongoing learning opportunities through:

- regular access to the most recent research findings (PigLink)
- occasional specialist short courses (refresher courses)
- an annual two-week course covering all the basics of pig production in Australia (Pig production – science into practice).

**PigLink**

PigLink is a new concept in Australia, that use modern communications technology to supplement the more traditional ‘producer seminars’. It consists of six 40-minute ‘producer seminars’ each year, delivered by a selection of Australian and, where appropriate, overseas scientists and covering topical subjects which will be of interest to pig producers. Specifically, these ‘seminars’ will clearly link back to the profitability of the pig unit while still embracing the up-to-date science underlying the presentation.

The presentations are Powerpoint-based with professionally recorded voice-over. They are provided to piggeries that register for the program as single CDs or web-downloads from this site. Immediately following the presentation registered users activate a live phone hook-up to the speaker for a 30-minute Question & Answer session. Users can also e-mail questions to the speaker over the next 5 days via this website. A complete list of Questions & Answers will appear on the website 7 days after each ‘seminar’.

**Refresher Courses**

In 2007 the NCPITE introduced a series of refresher courses for those already active in the Australian pork industry. The refresher courses are held at the Roseworthy campus of Adelaide University.

**Rural Industries Research and Development Corporation (RIRDC)**


Education resources including the following completed research project reports on animal husbandry:

- National Pork Industry Development program - Deep litter housing systems for pigs
- A review of the influence of housing systems for pregnant, farrowing and lactating sows on pig welfare
- Evaluation of sow stall dimensions
- Multi-media computerised training
- Effect of handling and housing on pig welfare
- Training programs for abattoir workers to improve pig welfare and meat quality welfare.
Formal Education – VET Sector

Agri-Food Industry Skills Council
The Agri-Food Industry Skills Council (AFISC) was formed in May 2004 as one of 10 industry skills councils established to represent enterprises and workers across the spectrum of Australian industries. The council is funded through DEST but is established as a private company reporting to a governing Board of Directors. The 14 directors reflect the interests of Australia's five major agri-food industry sectors, one of which is the 'Rural and Related Industries' Sector. This sector includes the Rural Production Training Package (RTE03) covering livestock/production animals and pig welfare.

Council's aim is to provide accurate industry intelligence to the vocational education and training sector about current and future skill needs and training requirements of its industries. Council supports the development, implementation and continuous improvement of quality nationally recognised training products and services, including Training Packages. AFISC is integrating a lot of animal welfare into its training packages.

Training Package Review
In 2006 the Agri-Food Industry Skills Council managed a review of the Rural Production Training Package to determine its future skills development needs. Changes to Australian Government policy and procedures require the incorporation of employability skills, identification and removal of unnecessary duplication and template adherence.

The Rural Production Training Package is the national benchmark for skills development in the industry and comprises the nationally-endorsed qualifications for agricultural, production horticultural and related sectors.

Qualifications incorporated into this training package (some specialising in poultry production) are listed below.
- Certificates I-IV
- Diploma
- Advanced Diploma
- Vocational Graduate Certificate
- Vocational Graduate Diploma.

Training Package Reform
During 2007 the Agri-Food Industry Skills Council has responded to the challenge of simplifying national training packages by retaining the integrity of qualifications and units while at the same time reducing complexity.

The AFISC solution incorporates a range of initiatives that are designed to improve the understanding of training packages. The fundamental focus is on establishing clear industry and job needs, and clarity of purpose relating to units of competency and qualifications that are structured according to industry expectations.

Associated with this focus is a shift to incorporate implementation issues into consultation and development and promotion of industry guides. This initiative has the capacity to support training package improvement by providing contextualisation detail not possible in a unit of competency.

AFISC has recently completed a round of consultation with national bodies associated with the training package improvement (including rationalisation) and training package review projects.

A key strategy going forward is to consolidate the AFISC unit of competence framework. This will involve improving the content within units of competence to more precisely define the “specification of work” required by the relevant industry.
This will lead to a greater transparency and understanding resulting in more valid and consistent assessment outcomes. The major impact will be a reduction to the list of knowledge and skill and the range of variables. The evidence guides will also be reworked to remove ambiguity. This is designed to provide clarity in relation to developing valid assessment and support materials.

A key outcome of the Training Package Reform will be industry ownership. The reform will increase the capacity of industry (employers and employees) to own, understand, use and comment on their relevant section of the competency framework, as a result of the removal of content that does not add value.

This is an important opportunity for the AAWS. More information on Training Package reform will be available from AFISC in 2008.

Registered Training Organisations

Registered Training Organisations (RTOs) deliver industry-related training based around the competencies in the Training Packages endorsed by AFISC. It is noted that training in the livestock/production sector draws primarily on units of competency from the Rural Production Training Package. In addition, RTOs are increasingly also using animal welfare related units of competency from the Animal Care and Management Training Package (RUV04) and the Australian Meat industry training package (MTM07). Some of the RTOs are profiled here.

According to industry feedback, private RTOs are the primary educators in the pork industry. For example, QAF Meat Industries of Australia (the largest producer of pigs and pigmeat in Australia) has had over the past 12 years about 1200 staff members enrolled in Certificate II (Agriculture) and Certificate III (Pig Production) in Victoria and NSW.

**Pork Industry Training (WA)**  

Pork Industry Training (WA) is an incorporated association whose role is to coordinate the delivery of training within the WA pork industry.

The association was formed to address the shortage of skilled staff in the WA pork industry. The industry is currently in a position to undergo significant expansion, however the lack of skilled staff has been identified as a potential impediment.

Pork Industry Training (WA) is funded by the pork industry through the Pork Producers Committee of the Agricultural Produce Commission, and reports to the Executive of the WA Pork Producers Association (WAPPA) on a quarterly basis.

Early in 2002, a Training Officer was appointed to concentrate on developing and facilitating training courses to meet the industry's needs.

Pork Industry Training (WA) played an integral role in the development of the WA Pig Skills Centre in Northam. The centre is a state of the art pig production facility established to provide training opportunities for new entrants and existing members of the industry.

Pork Industry Training (WA) training activities are divided into three key areas:

1. **Short courses** (usually one day duration)
2. The Stockperson Training Course (Cert III)
3. The Supervisors Training Course (Cert IV).

**1. Short Courses**

Short courses are on hold at the time of writing.
2. **Stockperson Training Course (Cert III Pig Production)**

The Stockperson Training Course is the industry-recommended off-the-job training component of a Certificate III in Agriculture (Pig Production) from TAFEWA CY O'Connor. Pork Industry Training (WA) and TAFEWA CY O'Connor have formed a partnership to enable the pork industry to deliver high quality training and have producers accredited with a nationally recognised qualification.

The course consists of six two-day modules that usually take place between March and September, with a break in June for those with seeding commitments. It covers the A to Z of pork production including mating, farrowing, weaner/grower management, handling, welfare, quality assurance, environment, nutrition, health, meat quality, record management, OH&S and communication. Participants are enrolled with TAFEWA CY O'Connor and government funding is available through the New Apprenticeship scheme. Training is delivered at Muresk Institute and the WA Pig skills Centre in Northam, and the Department of Agriculture in South Perth.

3. **Supervisors Training Course (Cert IV Pig Production)**

Pork Industry Training (WA) has begun developing an off-the-job training program to align with a Certificate IV in Agriculture specialising in Pig Production.

The course covers nine subject areas including animal welfare. The course structure is currently being determined however it’s likely that it will consist of ten modules delivered over two years.

The Supervisors Training Course is intended for piggery staff who have greater responsibility and input into decision making than the general stockperson. Participants would be involved in staff supervision and have responsibility for aspects of production other than pig husbandry.

Assessment tasks will be set for each subject area allowing participants to achieve their Certificate IV. Pork Industry Training (WA) requires a minimum of eight participants for the course to run. Class size is restricted to 12.

**WA Pig Skills Centre**


The WA Pig Skills Centre was opened in May 2000 to run as a commercial piggery as well as provide a training facility. Originally it was run by the WA Department of Education, but since 2003 A & AJ Gardiner have five-year lease to run it as a piggery and make it available for training purposes.

The piggery is a 260 sow breeder unit weaning pigs off site at three weeks of age. The mating shed and farrowing shed are environmentally controlled (air conditioned). The two straw-based dry sow shelters house sows from three weeks post-mating until two to three days prior to farrowing. The remaining two shelters house overflow farrowings and gilts upon arrival at the piggery.

The WA Pig Skills Centre has many roles, including:

- A showcase piggery to improve public perception of production, in terms of welfare and environmental impact.
- A training centre for Pork Industry Training (WA) to assist in training industry people.
- An educational centre for school aged students to learn about pig production and career paths in the industry.

The Centre is used to host work experience students, for hands-on skills training during Pork Industry Training (WA) courses, to provide university students with a practical understanding of pork production from science and business points of view, and hosting international visitors interested in WA production systems.
TAFE NSW
www.tafensw.edu.au

Certificate I in Rural Operations (RTE10103)
150 hrs
For people with little knowledge or experience of rural industries who want to develop some basic technical and manual skills used in a rural enterprise. Ideal for people wanting to enter the industry and also appropriate for school students completing work experience as an introduction to work in a rural enterprise.

Certificate II in Agriculture (Pig Production) (RTE20103)
370 hrs
For people in rural industries with no expertise but who want to develop basic technical and husbandry skills in the Pig industry. Also provides the underpinning knowledge required to apply these skills in the workplace. Learn how to work effectively in the Pig production industry and acquire the basic technical skills to be employed as a supervised worker in the industry.

Certificate III in Agriculture (Pig Production) (RTE31003)
590 hrs
For people in the Pig industry with some expertise who want to develop advanced technical and husbandry skills. Learn how to organise and coordinate the procedures that employees in the Pig industry must carry out. Also learn about technical skills that a senior employee on a pig enterprise should have. Suitable for owners of Pig operations who want to enhance their technical knowledge and skills.

Certificate IV in Agriculture (Pig Production) (RTE40103)
500 hrs
For people in the Pig production industry with some expertise who want to develop advanced technical and supervisory skills. Suitable for owners of Pig production operations who want to enhance their technical and supervisory knowledge and skills.

TAFE VIC

Certificate I in Rural Operations (RTE10103)
150 hrs
This qualification is part of the Rural Production Training Package. It develops basic skills and knowledge for a chosen farming stream. Students are provided with background principles and knowledge to support competencies learned and assessed on the job.

Certificate III in Agriculture (Pig Production) (RTE31003)
3 yrs
This qualification is part of the Rural Production Training Package, Pig Production stream, and provides training for employment as a senior Pig hand. A senior Pig hand is an experienced worker and is involved in co-ordinating a wide range of Pig production operations.

Certificate II and IV in Agriculture (RTE20103 and RTE40103)
2 yrs
Longerenong College provides practical training in farming as well as related technologies and business studies so the graduate can enter industry as a trainee manager, able to operate a farm enterprise, an agricultural contracting business, act as an overseer or work in the farm services industries in a range of agricultural sectors - including pig production.
Diploma of Agriculture (RTE50103)
2 yrs
South West Institute of TAFE VIC delivers this course in conjunction with the Advanced Diploma of Rural Business Management to give graduates a dual qualification. Provides the skills and knowledge in production systems, while the Advanced Diploma units provide the skills and knowledge in business management.

Advanced Diploma of Rural Business Management (RTE60203)
2.5 yrs F/T
South West Institute of TAFE delivers this course in conjunction with the Diploma of Agriculture to give graduates a dual qualification. Provides the skills and knowledge in business management, while the Diploma of Agriculture units provide the skills and knowledge in production systems.

Advanced Diploma of Agriculture (RTE60103)
2 yrs
Longerenong College delivers this course for people wishing to pursue a professional career as a supervisor, manager, or owner/operator in agriculture or agribusiness. Includes Certificate IV in Agriculture. Students graduate with both qualifications on completion of the program.

TAFE SA
www.tafe.sa.edu.au

Certificate III in Rural Business (RTE31703)
6 mths
These qualifications will provide graduates with the skills and knowledge required to successfully operate a rural business as a manager or owner.

Certificate IV in Rural Business (RTE40603)
6 mths
These qualifications will provide graduates with the skills and knowledge required to successfully operate a rural business as a manager or owner.

Diploma of Rural Business Management (RTE50403)
2 yrs
Provides the skills and knowledge required to operate a rural business as manager/owner, including: administering the business; installing a total quality management system; managing livestock production; managing machinery; managing pastures, fodder and crop production; marketing products; evaluating business performance; operating within a budget framework and rural business planning.

Diploma of Agriculture (RTE50103)
2 yrs
Skills covered include: administering the business; developing a business plan; developing a whole farm plan; implementing a property improvement plan; managing physical and natural resources; managing maintenance and arranging purchases and sales.

Advanced Diploma of Rural Business Management (RTE60203)
2.5 yrs
Incorporating Certificate IV in Rural Business and Diploma of Rural Business Management. Provides graduates with the skills and knowledge required to successfully operate a rural business as a manager or owner.
TAFE TAS
www.tafe.tas.edu.au/index.htm

Certificate IV in Agriculture (RTE40103)
18 mths - 2 yrs
Aimed at those people who wish to work at a supervisory level in the Agricultural industry (eg. Leading Hand - Pigs). Workplace-based (trainers visit students on their worksite every 4-8 weeks to assess progress). If you are not currently in a suitable workplace, TAFE staff may be able to assist you in doing this.

Diploma of Agriculture (RTE50103)
1.5 - 2.5 yrs
This course is aimed at those people who wish to work as a farm manager, share farmer or may be contemplating farm ownership. You will have direct responsibility for running a complete farming enterprise but you may report to others.

Advanced Diploma of Agriculture (RTE60103)
15 mths - 2.5 yrs
Aimed at those people who are farm owners, company farm managers, supervising technical officers or large share farmers, who have responsibility for running the operation on a day-to-day basis, but also have the responsibility of planning both short and long term activities including budget control.

TAFE Queensland

Australian Agricultural College Corporation
www.aacc.edu.au and www.agriculturalcollege.qld.edu.au

In 2005, Queensland’s four agricultural colleges merged to form a new force in agricultural and rural training — the Australian Agricultural College Corporation (ACCC). The new Agricultural College stands as a corporation sole constituted by the Director-General of Employment and Training.

The ACC aims to produce the best possible training result for rural industry, rural people and local communities. There are five campuses offering a range of agricultural and land management courses.

Queensland

Other Queensland institutions providing qualifications towards a career in the pig industry include:

Burdekin Agricultural College (a campus of the Australian College of Tropical Agriculture)
www.acta.qld.edu.au

Dalby Agricultural College
www.dac.qld.edu.au

Queensland University of Technology
www.qut.edu.au

College of Technical and Further Education
www.tafe.net
Formal Education – Schools Sector

Pig-related studies can be found in a number of high schools that emphasise the study of agriculture up to the Senior Secondary Certificate of Education. Some examples of individual schools that run piggeries include:

**Hurlstone Agricultural High School NSW**  

The school's 120-hectare farm includes a piggery where pregnant sows are bought and allowed to farrow over a period of several months, with piglets being sold as porkers or baconers, depending on demand at the local market.

**Yanco Agricultural High School NSW**  

Yanco Agricultural High School has extensive farm resources which are utilised in theory and practice. Students are rostered, to gain 'hands on' expertise, in livestock enterprises which includes a 20 sow piggery.

**Western Australian College of Agriculture, Cunderin**  

The College has a 45-sow herd and produces pork and bacon for the slaughter market. The College's production system has been modernised and streamlined through the introduction of a batch farrowing system. The piggery has achieved Level II Quality Assurance (QA) Accreditation. College animals regularly achieve the top price at sales.

**Western Australian College of Agriculture, Morawa**  

The College has a 40-sow piggery run on a batch farrowing rotation turning out 300-350 baconers per year. Students participate in the artificial insemination techniques necessary to ensure the success of this system.

Education resources

**The Pork Industry Educational Program**

The Pork Industry Education Program (PIEP) is an interactive multimedia educational resource that has been developed as a virtual reality farm, giving senior primary and junior secondary students the opportunity to actively engage in learning about a commercial farming system. The program allows students to visit an operating commercial piggery to extend their current limited knowledge about pork farming and the processing of foods from pork. Flexibility in delivery means that the program can be completed as stand-alone lessons or as a 10-week comprehensive program. Whole class, small group, individual and collaborative approaches to learning are supported.

The PIEP is designed to engage students of all abilities. Answers are provided to all worksheets and activities. Two literature texts, suited to varying reading abilities and worksheets are included along with assignments and answers to accompany the texts.

An evaluation of the PIEP and associated worksheets confirmed that students learned and retained the knowledge that they gained about pork farming and the processing of pork produce. Teachers and students alike expressed their enjoyment of the program and their belief in its educational potential.
The Program worksheets cover:

**Office**
1.1 Manage the finances of a piggery
1.2 Operations and problems: Addition - Mathematics
1.3 Vocabulary match-up - English
1.4 Scrambled words - English
1.5 Farm safety hazards - English, SOSE, Art: Cartoon Drawing
1.6 Location of pig producers in Australia - English, SOSE
1.7 Geometry: Angles - Mathematics, English
1.8 Breeds of pigs in Australia - SOSE, Art, English
1.9 Parts of a pig - Science, SOSE
1.10 Spelling list: Piggery Office - English

**Farrowing Shed**
2.1 Management of Pigs - English, SOSE, Arts: Design and Technology
2.2 Management of Pigs: Summary Writing - English
2.3 Crossword - English
2.4 Nesting - English, Mathematics
2.5 Calculating average daily weight - Mathematics
2.6 Code breaker - Mathematics
2.7 De Bono's Six thinking hats: Problem solving - English, Science
2.8 Spelling List: Farrowing shed - English

**Weaner Shed**
3.1 What pigs need - SOSE, Arts: Drama, SOSE
3.2 Piggery Journal - English, SOSE
3.3 Pig Adjectives - English
3.4 Code breaker - Mathematics
3.5 Who cares when it rains? - SOSE, Science, Maths
3.6 Temperature - Mathematics, SOSE, English
3.7 Weaner shed word search - English
3.8 Spelling list: Weaner shed - English

**Reproducing the herd**
4.1 Perimeter and area - Mathematics
4.2 Pig husbandry in the boar and sow sheds - English, SOSE
4.3 Feeding a pregnant sow - SOSE, Science
4.4 Pig genetic improvement with artificial insemination - Science SOSE
4.5 Genetic engineering science practical - Science, SOSE
4.6 Dry sow and boar shed crossword - English
4.7 Spelling list: Reproducing the herd - English

**Growers and finishers shed**
5.1 Paper-mache pigs - Art: Making
5.2 Paper plate pig masks - Art: Making
5.3 Mass - Mathematics
5.4 The importance of profits in piggeries - Mathematics
5.5 Farm Mathematics - Mathematics
5.6 Body systems of a pig - Science
5.7 Domestic pigs - English
5.8 Code breaker - Mathematics
5.9 Changes in farming - English, SOSE
5.10 Spelling list: Growers and finishers - English

**Transport**
6.1 Cubic puzzle - Mathematics
6.2 Codes of practice for the welfare of animals - English
6.3 Understanding the codes of practice - SOSE
6.4 Spelling list: Transport yard - English

Abattoir
7.1 Pork processing: Scrambled words - English
7.2 Food Chains - SOSE, Science
7.3 Illustrating the abattoir process - English, SOSE
7.4 Word search - English
7.5 Board game - English, Arts: Design and technology
7.6 Spelling list: The abattoir - English

Processing Plant
8.1 Pork meat: Using graphs - Mathematics, SOSE
8.2 Steps taken for processing the pig - SOSE
8.3 Addition of five digit numbers - Mathematics
8.4 Scrambled words - English
8.5 Healthy nutrients found in pork - Health, Mathematics
8.6 Spelling list: Processing plant - English

Retail
9.1 Pork cooking tips: Cooking pork skewers - Food Technology, Health
9.2 Supermarket maths - Mathematics
9.3 Preparing pork meat safely - English, SOSE, Arts: Media, Health
9.4 Monogram symbols - Arts: Media
9.5 Supermarket excursion - Mathematics, Arts: Media
9.6 Spelling list: Retail - English
9.7 Pork and other cultures - English, SOSE
9.8 Dietary Practices - Health, English
9.9 Media: Newspaper watch - Arts: Media, English

Conclusion
10.1 Small group projects/activities - English, Science, SOSE, Art, Technology
10.2 Debating - English
10.3 Constructing a 3D model of a piggery - English, Science, SOSE, Art: design and technology
10.4 Careers in the pork industry - English, SOSE
The Pork Industry Education Program in the Curriculum

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<th>State/Territory</th>
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PIEP content for each State or Territory

Topics:
- The anatomy of a pig
- Parts of a pig
- The behavior of pigs
- Breeds of pigs produced in Australia
- Feeding and nutrition
- Genetic engineering
- Artificial insemination
- Surgical procedures such as tail docking
- Farm management including housing systems
- Changes in farming practices
- Transportation of pigs
- Farrowing care
- Importance of growth rate
- Diseases of pigs
- Marketing of pork products
- Parts of the carcass and pork cuts
- Types of processing
- Manufacturing pig meat
- Pork cooking tips
- Preparing pork safely
- The supermarket
- Welfare and ethical issues
- Codes of practice
- Financial matters re piggeries
- Pig statistics

Compassion in World Farming

www.ciwf.org.uk/education/gapresources.html

Good Agricultural Practice: Pig Production

Compassion in World Farming has produced a resource targeted at tertiary students titled ‘Animal welfare aspects of Good Agricultural Practice: Pig Production. This 184-page publication can be downloaded free in pdf format.

Contents:
- Section 1. Introduction to pig welfare, behaviour and the development of intensive production (Introduction to animal welfare, Introduction to pig welfare, Natural behaviour of pigs, The development of intensive pig production).
- Section 2. Welfare aspects of the main stages of modern pig production (Dry sows, Farrowing sows, Piglets, Growing pigs, Boars).
- Section 3. General aspects of pig welfare (Selective breeding, Environmental enrichment, Aggression, Stress physiology, Disease, Stockmanship).
Section 4. Legal, economic, environmental and social aspects
(Pig welfare legislation, Economic, environmental and social aspects, Good agricultural practice and humane and sustainable development).

Case studies include free range, organic and group-housing pig breeding.

**Field of Wishes – an educational package on animal behaviour**

Developed by Raymond Rohner in 1997 this educational package on animal behaviour was produced as part of PIGVISION’s project FIELD OF WISHES. FIELD OF WISHES is an educational package on animal behaviour. It provides teachers with background information, resources and suggestions to plan and prepare a teaching course for year 9/10 high school students. Focussing on farm animals, the package is particularly suited for schools offering agricultural studies in their curriculum. Its flexible design, however, and open-ended approach to animal behaviour, allows teachers from other levels and disciplines to adapt individual aspects and topics to suit their own context.

FIELD OF WISHES is unique in that it explores the interface between art and science. It includes four PIGVISION experiments in which students investigate the pig's feeding behaviour. The package is also designed to help increase awareness and understanding of the central role agricultural science plays in Australia's economic and social well-being.

FIELD OF WISHES was sponsored by the Science and Technology Awareness Program of the Commonwealth Department of Industry, Science and Tourism in Canberra.
Informal Education – Government

NSW Government

The NSW Department of Primary Industries has information on pork production in the state, pig breeds and breeding, Pig husbandry, Pig housing and environmental issues, Pig health, disease and animal welfare, and Enterprise management. The DPI website also has information on the NSW Pork Industry Taskforce.

Prime Facts

Prime Facts is a series of information sheets available from the NSW DPI website. Topics include pig husbandry and pigs-as-pets.
- The Weaner
- The Litter
- Gilts and Sows
- Grower Herds
- The Boar
- Pigs-as-pets.

Victorian Government

The Victorian Department of Primary Industries has information on pork production in the state, animal health, animal welfare, Codes of practice and Pig/Pork research.

South Australian Government

The Primary Industries Research South Australia (PIRSA) website contains a copy of the comprehensive South Australian Pork Industry Strategic Plan for 2010. The plan aims to assist the SA Pork Industry, with whole-of-government support, to become the most competitive pork production and processing region in Australia. There are numerous references to animal welfare in the Plan.

South Australian Research and Development Institute

Pig and Poultry Production Institute (PPPI) Welfare and Husbandry Research Program
Conducts research around the concern about animal welfare based on the assumption that animals can experience pain and distress in the same manner as humans.

Western Australian Government
http://www.agric.wa.gov.au

There is not a lot of specific information about pigs on the Department of Agriculture and Food WA website but the search engine does link to issues including pig housing and other pig welfare issues. There are also 67 issues of the newsletter Pig Tales available in .pdf format.
General information about animal welfare can be found at: http://www.dpiw.tas.gov.au/inter.nsf/WebPages/EGIL-535VVF?open

Queensland

There is information on the Queensland Department of Primary Industries and Fisheries’ website about the care and husbandry of pigs that includes some basic animal welfare information.
Informal Education – Animal Interest Organisations

RSPCA
www.rspca.org.au

RSPCA’s Fair Go For farm Animals Campaign

The RSPCA believes that farm animals must be treated in a way which meets their physical, physiological and psychological needs. Farm animals must not only be provided with appropriate food, shelter and veterinary care, they must have the freedom to express normal behaviours and be kept in an environment which avoids suffering. The RSPCA therefore opposes many common practices in farming and animal husbandry because it believes that such practices do not meet the animals’ needs. To try to bring about improvements in conditions for farm animals the RSPCA runs public campaigns and lobbies government and industry.

The Fair Go for Farm Animals campaign includes the pig/pork industry: Fair Go for sows

RSCPA ‘s Science Updates

The Animal Welfare Science Update is produced by the RSPCA Australia office to provide information on developments in animal welfare science that relate to the work of the RSPCA.

The Update provides summaries of recently published scientific papers that contribute to our understanding of animal welfare. The Update also includes a bibliography of any other papers that were received by the RSPCA Australia office.

The Update is published electronically every quarter and is available via the RSPCA Australia website or through direct email.

Animals Australia
www.animalsaustralia.org

Animals Australia (AA) campaigns on behalf of all farm animals and has a dedicated website focusing on pig welfare.

Animals Australia ‘Save Babe’ Campaign
www.savebabe.com

SaveBabe.com is a website and a campaign that has been created by Animals Australia to highlight the suffering of factory farmed pigs in Australia. Animals Australia argues that laws have failed to protect millions of pigs each year from acts of cruelty. The website has been created to inform, educate and empower consumers to help create needed change.
Animal Liberation
www.animal-lib.org.au/

Animal Liberation is an animal rights charity founded in 1976 by Christine Townend, based on the philosophies of Professor Peter Singer, as set out in his worldwide best-selling book Animal Liberation. Animal Liberation has branches in all states of Australia and many thousands of supporters.

Voiceless
www.voiceless.org.au

Voiceless is an animal protection organisation. It is getting active in the field of education and “hopes to ensure that the children and youth of today become the compassionate and informed decision-makers of tomorrow - taking action for animals.”

Its aims are to:
1. Give grants to organisations that share its vision
2. Educate Australians and in particular young Australians
3. Work to modify or create legislation and policies to protect animals.

Voiceless has two educational initiatives - Animal Club and Voiceless Animal Advocates.

Animal Club
www.animalclub.org.au

Animal Club is a national network of clubs in schools across Australia. Animal Club provides young people with a network through which they can take part in activities that promote respect and compassion for animals. Voiceless states on its website that this is the only national animal education program that inspires and informs students about animal protection issues and rewards schools through funding, prizes and incentives. The Club provides information, resources and links to humane education. School grants (or "seed funding") are available throughout the year via Animal Club.

Voiceless Animal Advocates

Voiceless Animal Advocates (VAA), is a national network of student societies on university campuses. VAA provides a forum to promote respect and compassion for animals amongst university students. Students on a particular campus run each VAA. VAA will organise activities at their university or in the community to raise awareness of animal protection issues. Currently, VAA is focusing on law students and Animal Law reform. Voiceless plans to expand VAA to encompass other university disciplines including veterinary science, politics and economics.

Pig Industry Report
Voiceless has published a report on the NSW Pig Industry "From Paddocks to Prisons - Pigs in NSW Current practices, Future Directions." Animals Australia, CIWF, Human Society international and the World Society for the Protection of Animals endorse the report. (Available in pdf format).

Compassion in World Farming

Compassion in World Farming (CIWF) is an international animal protection organisation that actively campaigns to improve the lives of farmed animals worldwide. CIWF’s has Headquarters in the UK, offices in France and the Netherlands, representatives in Australia and South Africa and works with like-minded organisations and individuals around the world. In Europe, CIWF coordinates the 36-member European Coalition for Farm Animals (ECFA).

Compassion in World Farming has received funding from 'Voiceless, the fund for animals' towards the development of educational projects in Australia since 2004. CIWF produces educational resources,
including a DVD titled 'Farm animals and Us in Australia' presented and narrated by Hugo Weaving. A 28 second introductory clip has been added to the youtube website and the myspace website.

**Humane Education: a compassionate ethic for animals Symposium (October 2007)**

CIWF partnered with Griffith University Centre for Public Culture and Ideas (CPCI) in a major project to host a symposium in Brisbane in October 2007. The symposium, titled – Humane Education: a compassionate ethic for animals, was held at the Griffith University (Nathan Campus) EcoCentre and made possible by funding from Voiceless, the fund for animals.

Within a framework of Values Education the symposium brought together delegates from educational sectors across the nation, including practising teachers, lecturers, trainee teachers and tertiary students, together with parent bodies, government and animal welfare representatives.

A diverse programme covered the practical application of humane education in the primary and secondary school sector in Australia. Aspects explored in discussions include teacher training and curriculum development, Schools Animal Ethics Committee (AEC) representation, Values Education, education in agricultural, veterinary and social science. Sessions dealt with current issues and looked to future developments across the various fields.

Professor Terry Lovat, Pro-Vice Chancellor (Education and Arts) of Newcastle (NSW) University, delivered the Keynote Address. See [www.ciwf.org.au](http://www.ciwf.org.au) for the Symposium Programme, speaker biographies and abstracts. Proceedings will be available in 2008.

**People for the Ethical Treatment of Animals (PETA)**

[www.peta.org](http://www.peta.org)

People for the Ethical Treatment of Animals (PETA), with more than 1.6 million members and supporters, is the largest animal rights organisation in the world. PETA focuses its attention on the four areas in which the largest numbers of animals suffer the most intensely for the longest periods of time: on factory farms, in laboratories, in the clothing trade, and in the entertainment industry.

PETA works through public education, cruelty investigations, research, animal rescue, legislation, special events, celebrity involvement, and protest campaigns.

**Sustainable Table**

[www.sustainabletable.org](http://www.sustainabletable.org) and [www.thematrix.com](http://www.thematrix.com)

Sustainable Table is a website that: “celebrates the sustainable food movement, educates consumers on food-related issues and works to build community through food.”

It is a very extensive website that advocates strongly against intensive farming and it includes a section on animal welfare.

The Meatrix website is an interactive animated website that is based on the popular film The Matrix. Its introduction states: “Do you want to know more about the problems of factory farming while finding out about healthier food for you and your family? Learn, discuss, get involved – and join our online community.” It’s an example of sophisticated use of the internet and use of social media and includes a Blog and has downloadable videos.

**The Pig Site**

[www.thepigsite.com](http://www.thepigsite.com)

This website is devoted solely to Pigs and their good health and welfare. It aims to become a global hub for information on Pigs. It contains international academic articles on pig welfare.
Appendix 1 – Rural Industry Training Package

Competencies in the functional area: ‘raising livestock’ that have specific pig welfare implications

RTE1101A  Support extensive livestock work
RTE2110A  Maintain livestock water supplies
RTE3113A  Identify and draft livestock
RTE5103A  Manage livestock production
RTE2111A  Identify and mark livestock
RTE3114A  Implement feeding plans for livestock
RTE4109A  Oversee animal marking operations
RTE2114A  Monitor water supplies
RTE3115B  Implement livestock husbandry practices
RTE4119A  Supervise animal health programs
RTE2124A  Carry out birthing duties
RTE3116A  Mate and monitor livestock
RTE4110A  Supervise natural mating of livestock
RTE2127A  Castrate livestock
RTE3147A  Prepare for and implement natural mating of livestock
RTE2128B  Provide feed for livestock
RTE3119A  Euthanase livestock
RTE4104A  Develop livestock feeding plans
RTE5106A  Develop production plans for livestock
RTE2136A  Load and unload livestock
RTE3131A  Transport livestock
RTE4105A  Escort animals during export
RTE2131B  Care for health and welfare of livestock
RTE3133B  Prepare livestock for competition
RTE4120A  Implement and monitor animal welfare programs
RTE5104A  Develop livestock health and welfare strategies
RTE2144A  Carry out regular livestock observation
RTE3134A  Slaughter livestock
RTE2113B  Monitor livestock to parturition
RTE3121B  Prepare animals for parturition
RTE2115A  Muster and move livestock
RTE2128A  Collect, store and administer colostrum
RTE2143A  Mate pigs and monitor dry sow performance
RTE3123A  Pregnant pigs
RTE4116A  Implement a feeding strategy for pig production
RTE2129A  Move and handle pigs
RTE3124B  Rear newborn and young livestock
RTE4117A  Implement intensive production systems
RTE2133A  Artificially inseminate pigs
RTE4118A  Develop feeding plans for an intensive production system
RTE2143A  Mate pigs and monitor dry sow performance
RTE3127A  Treat rectal prolapse in pigs
RTE4125A  Supervise nutrition and feeding in an intensive production system
RTE2145A  Care for weaner and grower pigs