QSAEC

Queensland Schools Animal Ethics Committee

An independent committee formed by Department of Education, Queensland Catholic Education Commission and Independent Schools Queensland

PIGS

STANDARD OPERATING PROCEDURE
Approved 25/08/2021

Approval to conduct activities under this Standard Operating Procedure (SOP) is conditional upon pedagogical justification for this use of animals being documented by the activity leader and reviewed by the principal.

Schools may undertake the approved activities outlined in this SOP once authorised to do so by the Queensland Schools Animal Ethics Committee (QSAEC) Animal Ethics Officer.

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SECTION 1 | OBLIGATIONS

1.1 LEGAL OBLIGATIONS

Schools have legal obligations under the *Animal Care and Protection Act 2001* (Qld), the Animal Care and Protection Regulation 2012 (Qld), and the *Australian code for the care and use of animals for scientific purposes,* 8th edition 2013 (updated 2021) (Cwlth) (the Code), including:

1) ensuring persons in charge of an animal fulfil their duty of care to that animal
2) obtaining animal ethics approval prior to conducting scientific activities involving animals and acting in accordance with that approval once granted
3) reporting on the use of animals for scientific purposes.

Non-compliance with this legislation may result in schools receiving a maximum fine of 300 penalty units. (Penalty unit value is notified in the **Penalties and Sentences Regulation 2015 (Qld)**).

All Queenslanders have a 'general biosecurity obligation' under the *Biosecurity Act 2014* (Qld). Schools are responsible for managing biosecurity risks that are under their control and that they know about, or should reasonably be expected to know about. Contact Biosecurity Queensland on 13 25 23 for advice on managing specific risks or to report notifiable incidents.

1.2 DUTY OF CARE FOR ANIMALS

If you are in charge of an animal, you have a duty of care to that animal - no matter why you are in charge of it, what you are using it for or how long it will be in your care. All decisions and actions involving the care and use of animals for scientific purposes must be underpinned by respect for animals. This respect is demonstrated by:

- using animals only when justified
- supporting the wellbeing of the animals involved
- avoiding or minimising harm, including pain and distress, to those animals
- applying high standards of scientific integrity
- applying the principles of Replacement, Reduction and Refinement (the 3Rs) at all stages of animal care and use through:
  - **replacement** of animals with other methods (alternatives)
  - **reduction** in numbers of animals used
  - **refinement** of techniques used, in order to minimise adverse impacts on animals
- knowing and accepting one's responsibilities.

1.3 PEDAGOGICAL JUSTIFICATION FOR THE USE OF ANIMALS IN EDUCATION

It is the teacher's responsibility to provide a pedagogical justification for any learning activity that involves the use of animals, including activities approved under a SOP. The use of animals must provide an added component to the learning that is neither trivial nor available in other ways, and there must be evidence to support this position**. Planning documents must clearly identify how the use of animals is essential to achieving the learning objectives.** The justification should consider whether non-animal alternatives achieve the same learning objectives, the minimum number of animals necessary to achieve the objectives, the impact on the animal/s involved and whether the potential effects on the wellbeing of the animals are justified by the potential benefits of their use.

The QSAEC, when undertaking a site visit at the school, may request to see documentation detailing the pedagogical justification for the use of animals. If there are viable alternatives to animal use that meet the learning objectives, they must be used in preference to using animals. At all times the impact on the animal/s should be considered and, where appropriate, discussed with the students in an age-appropriate way.

Activities outside the scope of this SOP **must be considered by QSAEC before approval can be granted**. To seek approval to conduct activities additional to those approved under this SOP or to modify an activity approved in this SOP, submit a Modification, SOP variation or amendment form in conjunction with the Application/Activity notification form at the last page of this SOP.

Please note: The QSAEC will **not** approve any activities classified as Category 4 in Categories of animal use.

1.4 ANIMAL HEALTH AND WELFARE

Responsibilities of school personnel under the Code details obligations of staff under animal welfare legislation to promote the responsible care and use of animals for scientific purposes.

An **unexpected adverse event** is any event that may have a negative impact on the wellbeing of an animal and was not foreshadowed in the approved proposal, SOP or subsequent documents to QSAEC.

An unexpected adverse event may result from different causes, and includes but is not limited to:

- death of an animal, or group of animals, that was not expected (e.g. during surgery or anaesthesia, or after a procedure or treatment)
- unexpected adverse effects following a procedure or treatment
- adverse effects in a larger number of animals than predicted during the planning of the project or activity, based on the number of animals actually used, not the number approved for the study
- a greater level of pain or distress than was predicted during the planning of the project or activity
- power failures, inclement weather, emergency situations or other factors external to the project or activity that have a negative impact on the welfare of the animals.

In the event of an unexpected adverse event or emergency, prompt action must be taken to address any adverse impacts on the animal/s. Alleviating unanticipated pain and distress must take precedence over an individual animal reaching the planned endpoint of the project, or the continuation or completion of the project. Emergency treatment may be required and, if necessary, animals must be humanely killed without delay.

In response to an unexpected adverse event, action and investigation by the activity leader or facility manager is required to ensure students, staff or other animals are not inadvertently affected. The specific response will depend on the animal and the circumstances. It may require seeking advice from a veterinarian to determine the best course of action (e.g. necropsy of the dead animal by the vet), removal of the deceased animal (e.g. by the supplier), or diagnostic investigations of facility or management practices to determine cause of death (e.g. water testing of fish tank, checking of ventilation).

All adverse events provide opportunities for students to learn from the experience. Activity leads should optimise student learning outcomes (incidental and planned) by focussing on the learning potential of a specific event (e.g. prevention, animal welfare, diagnostic tools, treatment, security, harm minimisation).

Notify the QSAEC within 7 days of the event, using an Unexpected adverse event report.

Please note: Necropsy of a dead animal is not an approved activity under this SOP due to potential health and biosecurity risks, and must only be performed by a competent person. QSAEC recommends that if a necropsy is required it is performed by a vet.

Further advice about reporting unexpected adverse events is available on the Department of Agriculture and Fisheries (DAF) website.

1.5 STUDENT AND STAFF HEALTH

Those involved in the care and use of animals should make themselves aware of the potential disease hazards and other associated occupational health and safety issues, and manage risks according to the school's risk management process. Apart from injuries which may occur due to handling animals, there are a variety of infectious diseases (zoonoses) that are transmissible from various animals to humans.

Zoonotic diseases are common and the illnesses they cause can be serious. They can be spread by direct contact with animals, for example via bites or scratches, or through contact with animal faeces, bodily fluids, airborne particles, birth products or enclosures contaminated with these materials.

Staff should familiarise themselves with the zoonoses the animals in their care may potentially transmit, the routes of transmission and what activities may potentially expose staff or students to infection. This research will inform the risk assessment to determine how to manage these risks or determine whether the activity should be conducted at all.

For comprehensive advice regarding zoonotic diseases and precautionary measures to minimise risks to staff and students, refer to Animal observation and handling, Animal contact guidelines - reducing the risk to human health 2014 (Interim) and Preventing zoonoses.

Risk management of animal activities ensures the health, safety and well-being of students, staff and others involved. If a specific Curriculum Activity Risk Assessment activity guideline exists, that guideline must be adhered to at a minimum. Risks associated with zoonotic diseases carried by animals must be identified and measures planned to allow activities to be conducted with an acceptable level of residual risk.

Any incident or injury that occurs in association with an activity must be reported, recorded and notified in accordance with the Health, safety and wellbeing incident management procedure.

1.6 RECORDKEEPING

Schools must keep a school-based animal activity register which includes hard copy records relating to their use of animals for scientific purposes for seven years for audit purposes. This includes:

- scientific user registration (for non-state schools)
- signed applications, activity notification forms and modifications
- approval responses from QSAEC
- signed QSAEC reports (e.g. annual completion reporting, unexpected adverse events, complaints).

Clear and accurate records relevant to the species used in the activity/s should be readily available, including:

- animal identification records (e.g. species, number of animals in each enclosure, dates and sources of acquisition of each animal, and disposal details and dates for each animal)
- feeding logs (times/amount) for each enclosure
- breeding records
- maintenance/monitoring logs for each enclosure including electrical equipment
- dates and types of husbandry practices carried out
- names, dosage, dates of any chemicals administered and veterinary treatment provided
- emergency contacts and procedures.

SECTION 2 | QUALIFICATIONS, SKILLS AND EXPERIENCE

In accordance with Schedule 2, Code of practice about pigs, of the Animal Care and Protection Regulation 2012 (the Regulation), a person is suitably qualified to carry out pig husbandry procedures as defined in that code **only if** –

(a) the person is a veterinary surgeon

or

(b) a registered training organisation has issued the person either of the following that is relevant to carrying out the procedure—

(i) a Certificate III in Agriculture (Pig Production) or an equivalent qualification

(i) a statement of attainment for achieving the units of competency required for the Rural Production Training Package for pig production or an equivalent statement of attainment

or

(c) the person has received, for a period of at least 12 months, practical training and experience in husbandry procedures at a pig establishment that, during the period, complied with an industry recognised quality assurance program or had in place an industry recognised herd health program for pigs at the establishment.

In addition to meeting these criteria, any teacher conducting a scientific animal activity must have competency in the particular procedure and:

- a relevant science or science education qualification (e.g. Agricultural Science, Biological Science)

  or
- relevant science or science education experience as deemed appropriate by the school principal (generally 2 years' experience).

For new or inexperienced teachers (less than two years' experience), **for activities requiring performance by a competent person (rather than a suitably qualified person under the Regulation),** all activities must be conducted under the supervision of a Science or Agricultural Science Head of Department (HOD) or suitably experienced person.

Where direct supervision of a suitably experienced person is not available, a new or inexperienced teacher must:

- identify a mentor, maybe a Science or Agriculture HOD from a neighbouring school
- provide planning documents to the mentor.

Persons deemed to be suitably qualified must have:

- conducted risk assessments on the procedure/s to be carried out
- found the procedure/s to be safe and humane considering animal and student welfare
- considered the maturity and suitability of the student/s involved in the activity.

Teachers should ensure that animal users, including students, staff and volunteers, are provided with adequate prior instruction in specific activities to enable appropriate care of an animal and to minimise risk of undue stress or harm to an animal.

SECTION 3 | STANDARDS OF PRACTICE

The domestic pig (sus domesticus) is an omnivorous hoofed mammal with sparse bristly hair and a flat snout. Domestic pigs in Australia are farmed primarily for meat and are sometimes kept as companions.

Schools considering establishing pigs on their school site should find out the local government requirements for keeping pigs in their particular area from their local council. Refer to DAF for more information.

Consideration must be given to the smell and the increased incidence of flies that often accompany pig housing as this may have a negative impact on the school site and also local residents. Appropriate management and attention to detail will need to be maintained to alleviate this potential issue.

Schools must also comply with the mandatory Code of practice about pigs, at Schedule 2 of the Regulation.

3.1 PHYSICAL ATTRIBUTES OF PIGS

Size	Medium size farm animal up to approximately 180kg. Small varieties, such as Australian Companion Pigs, are half the size of normal pigs.
Weight	Adult: 100-300kg+ live weight Porker: 30-54.5kg dressed weight Baconer: 65-80kg dressed weight Weaners: 15-25kg live weight Grower: 20-45kg live weight Finisher: 70kg live weight Breeding sow: 120kg
Age at adult size	12-24 months (100-120kg)
Life span	Approximately 15 years
Sexual maturity	Gilts (female pigs that have not previously farrowed or given birth) may be mated from 28 weeks, if well-developed and weighing approximately 120-130kg live weight.
Weight at birth	1-2kg
Gestation period	112-115 days
Breeding life	8-9 years
Number of offspring	Average litter 8-15 piglets and up to 20 piglets
Weaning	3-4 weeks (5-10kg)
Sale weight	Reached about 5-6 months after weaning
Healthy characteristics	Body temperature: 38.8˚C-39.7˚C Heart rate: 60-80 beats/minute, taken inside a hind knee or over the heart Respiration rate: 20-50 breaths/minute

3.2 ENVIRONMENT

Activity leaders should refer to Section 4 and Appendix 3 of the Pig PISC Code for detailed information about accommodation systems, equipment, environment, protection, waste control and pigs kept outdoors.

HOUSING For good pig welfare, an all-weather shed which includes dry bedding for the pigs, is required.

Sow housing should optimise the health, nutrition and welfare of sows, newly born piglets and unborn piglets. Accommodation for farrowing and lactating sows must be designed and managed to optimise sow welfare whilst minimising piglet mortality.

Pregnant sows housed in groups will fight to determine group hierarchy, with fighting accentuated at feeding times so any housing system must minimise competition between sows through improved mobility, environment and social interaction. The Australian Veterinary Association supports group housing that reduces the need to confine sows individually during early pregnancy.

Farrowing accommodation must:

- ensure appropriate daily food and water intake and good nutrition of all sows (including the increased feed and water intake required to produce milk for rapidly growing piglets)
- minimise the number of overlain suckers and the pre-weaning death rate
- enhance the health, nutrition, welfare and survival of piglets by:
    - providing control over the quality of their environment
    - allowing the provision of supplementary heating and feeding (if required)
    - facilitating close supervision and care by farrowing shed stockpersons.

The quality of stockmanship of the persons caring for the sows and piglets must be sufficiently high to minimise any adverse effects of sow housing.

All outdoor pigs must have access to shelters in cold weather and shade in hot weather. Consideration should be given to methods of reducing the build-up or effect of disease pathogens by the use of herd health programs that include vaccination, parasite control and regular pasture rotation and spelling.

Pens should be constructed of strong steel fencing. Pen and outdoor fencing needs to be checked regularly to ensure that there is no loose wire or protrusions that will cause injuries.

Refer to DAF's basic requirements for pig housing for further information.

SPACE Pigs require sufficient space to lie with limbs extended, stretch and move freely, sleep, feed, defecate and urinate. The Regulation prescribes minimum space and other accommodation requirements (e.g. providing protection from sunlight and severe weather). Wherever possible, a greater amount of space should be provided, with access to the outdoors and environmental enrichment.

Minimum space allowances for pigs in indoor and outdoor systems are shown below. An additional 30% indoor floor space is required for pigs in deep litter housing.

Minimum space allowance for indoor systems

Description	Space	Comment
≤10kg	0.14m2	20-30% of space allowance provides for a dunging area
11-20kg	0.22m2	20-30% of space allowance provides for a dunging area
21-40kg	0.36m2	20-30% of space allowance provides for a dunging area
41-60kg	0.47m2	20-30% of space allowance provides for a dunging area
61-80kg	0.57m2	20-30% of space allowance provides for a dunging area
81-100kg	0.66m2	20-30% of space allowance provides for a dunging area
Sow in farrowing crate	0.5m x 2m	
Farrowing crate and creep area	3.2m2	Piglets to four weeks of age
Farrowing pen	5.6m2	
Adult sows in individual stalls	0.6m x 2.2 m	

Adult boars in individual stalls	0.7m x 2.4 m	
Boars in individual pens	6.0m2	
Gilts (over 100kg) in group housing	1m2	
Adult pigs in group housing	1.4m2 each	

Minimum space allowance for outdoor systems

Description	Minimum space
Dry sows in groups in paddocks	20-25 sows/ha; 300-400m2 per sow
Lactating sows with piglets in groups in paddocks	9-14 sows /ha
Sows in individual paddocks	400-500m2 per sow
Dry sows in groups in shelter accommodation	1.2 – 1.5m2/sow
Lactating sows with piglets in shelter accommodation	4 – 6m2/sow
Boars in shelter accommodation	2m2/boar

MOVEMENT AND EXERCISE When sufficient space is provided, exercise is usually obtained through interactions such as seeking food, water and playful behaviour that is often quite physical.

TEMPERATURE Pigs, except for young pigs, can generally tolerate a range of temperatures. Optimal temperatures vary according to the pigs' total weight and specific conditions in the pig accommodation. However, if pigs spend time huddling or shivering, and eat more than usual, they are usually cold. If they avoid body contact with pen mates, eat less, foul areas of their pens that they normally keep clean (possibly lying in this and other wet areas) and pant at more than 50 breaths per minute, these may be signs that they are too warm.

The optimal temperatures for pigs at various stages of development are:

Piglets (newborn)	27°-35°C
Piglets (three weeks of age)	24°-30°C
Farrowing house	16°-22°C
Weaners	20°-30°C (in the first week)
Growers, finishers, sows and boars	15°-27°C

Pigs can tolerate lower temperatures if the area is not draughty. Danger areas are cracks in walls or near floor level, open-ended trenches which let draught up through the slats, and uncovered heat lamps in otherwise cold buildings which can create a draught at floor level when cold air displaces hot air. Creep boxes or covers should be used to retain warmth and reduce draughts.

LIGHT A daily minimum of 9 hours of artificial or natural light of at least 20 lux is required to provide the optimal environment for growth and health.

VENTILATION Building orientation, insulation and ventilation in a piggery will impact air quality and temperature. Fresh air must be introduced to prevent a build-up of ammonia, water vapour, carbon dioxide, airborne dust, bacteria and odours. Guideline levels for common air pollutants in pig housing are at s.4.3.10 of the Pig PISC Code. Monitoring of ammonia levels should be focused on areas of least ventilation.

There must be an effective backup system for automatically-operated ventilation systems, to ensure the housing is ventilated if there is a power failure.

SHELTER A weather-proof shed is essential for pigs housed outdoors. Pigs require sunlight but are susceptible to sunburn so access to shade is an essential consideration in Queensland. Particular care needs to be taken with white breeds.

CLEANING Partly or fully slatted floor pens are easier to clean than solid concrete floors, which may be satisfactory if they are well drained. A shovel, or a hose in well-drained piggeries, should be used to remove solid waste. Alternatively, flushing drains, which self-clean, can be installed. Drainage from the piggery must not be allowed to enter a running stream.

BEDDING Pigs must be provided with a dry area for sleeping. Dry nesting material, such as dry straw or untreated wood shavings, should be placed in a restricted area away from the dunging area. Suckling piglets and weaners should be provided with bedding, insulation or supplementary heating that protects against cold.

MINIMISING ENVIRONMENTAL IMPACTS If you operate a piggery, you are required to monitor its environmental impacts and prevent it from affecting the surrounding environment, communities and residents.

Refer to DAF guidelines and monitoring.

3.3 FOOD AND WATER REQUIREMENTS

Diet composition and quantities of feed must be recorded for all animals.

TYPE Pigs are naturally foraging animals, and for optimum digestion and health should be able to forage around in the dirt outside eating a vast range of vegetation as well as small grubs. However they also need a balanced ration usually based on cereal grain. Refer to DAF's Nutrient webpages and A diet fit for a pig: seven basic rules for basic principles of pig nutrition.

Commercial pellets can be used to provide a diet suitable to animal type and growth stage (e.g. Pig Grower, Pig Finisher, Sow Pellets, Piglet Creep Feed). Changes in the composition of the diet should be managed to avoid digestive upsets.

All piglets must receive an adequate supply of colostrum from the sow or an appropriate colostrum substitute as soon as possible after birth, and within 24 hours. If piglets are not being fed adequately by the sow, they must be fostered, hand-reared or killed humanely. Sows should be managed to prevent piglets from other litters sucking from recently farrowed sows, to ensure the sow's own piglets get the colostrum and milk they require.

Please note: Swill feeding (feeding food or food scraps containing, or contaminated by, animal matter) is banned because of the serious risk of introducing exotic diseases such as foot and mouth disease or swine vesicular disease into Australia. Penalties apply under the *Biosecurity Act 2014*.

FREQUENCY Weaners and young growing pigs should be provided with frequent small meals of fresh, palatable feed. Adult and growing pigs should be given enough bulky feed or high fibre feed to satisfy hunger and foraging needs. Growers and adults can be fed once daily. Lactating sows may reduce their feed intake in hot weather and this can affect their milk production. More frequent feeding than once a day may be required.

QUANTITY Nutrition requirements are affected by many factors (e.g. climate, age, gender, size, health, level of activity and exercise). It is not appropriate to specify the complete range of quantities and nutrients required. Body condition scoring should be used to visually and manually assess whether animals are receiving adequate nutrition, although weight for age may be a more reliable indicator than body condition score for young rapidly growing pigs. Manual scoring guides are available on DAF's website and at Appendix 1 of the Pig PISC Code. Action must be taken to improve body condition if a pig's body condition score falls below 2.

Feeding systems should maximise the opportunity for each pig to receive sufficient daily food, and to prevent undue competition and injury. Remedial action must be taken if persistent bullying is leading to deprivation from food.

Refer to DAF Pig Feeding Guidelines and nutrition basics for recommended feed intake for various classes of pigs.

WATER Adequate supplies of clean water, placed in cool shaded areas in hot weather, are essential. Remedial action must be taken if persistent bullying is restricting access to water for any pigs.

Appendix 2 of the Pig PISC Code specifies average water consumption at different growth stages (e.g. 9 L/day for growers, 45 L/day for a sow and litter) and recommended water flow rates and pressures.

Automatic waterers are the preferred and most efficient method of providing water in piggeries. If automatic nipple drinkers are used, they must always be fitted with fail-safe mechanisms and must be checked daily.

3.4 NORMAL BEHAVIOUR

Healthy pigs are vigorous and alert. They have moist snouts, warm ears and skin that is in good condition. They have a good appetite, firm dung and breathe steadily. Pigs do not have very good eye sight, however they have good hearing and sense of smell. Grunting is common when they are disturbed.

Pigs generally seek the company of other pigs as they are inquisitive by nature and playful with others. They have a strong flight reaction and will run when threatened. They prefer to stay in close visual and physical contact with each other and have a tendency to group together when forced.

Pigs should not be kept as solitary animals, with the exception of pregnant sows, adult boars and sick animals.

Generally, pigs welcome attention and will be very interested in their visitors. Pigs used in schools should be docile and familiar with human contact. Pigs raised in a pen with close contact with people will be calmer when being handled as opposed to pigs raised in a free ranging area. They should always be given some form of environmental enrichment such as hanging tyres, logs, balls hanging on chains and dirt to forage in.

Pigs are not generally aggressive, however aggression problems can occur in group housing accommodation. Suggested measures to manage this can be found at section 4.1.14 of the Pig PISC Code.

Sows with piglets and mature males should always be treated with caution as it can be expected that they will be protective/aggressive at times.

3.5 BREEDING MANAGEMENT

In accordance with s.4.6 of the Code, animal breeding that does not achieve an educational outcome in science and fails to provide for the lifetime welfare of animals (and their offspring) cannot be demonstrated to, or carried out by, students.

Pigs are a highly productive species, with sows able to produce more than two litters per year.

The production cycle of a pig from conception to reaching sale weight can take up to 310 days. Pigs breed at all times of the year, regardless of the season. However, pigs can be affected by seasonal infertility.

Boar exposure is the preferred and most effective means of bringing a gilt onto heat. Gilts are usually mated at their second cycle or around 30–34 weeks. Sows that have already farrowed have boar exposure to determine if they are on heat. Female pigs will either be mated with a boar naturally or will be artificially inseminated. The objective is to ensure the breeding females will have a long and productive life in the breeding herd, requiring responsible animal welfare and treatment.

After the sows and gilts are mated, they are moved into the dry sow or gestation area of the breeder sheds or paddocks. They will remain there during most of their pregnancy.

About a week before giving birth, they are moved into the farrowing or birthing sheds or paddocks.

Please note: Sows cannot be placed in a farrowing crate earlier than 7 days before the day they are expected to farrow. General requirements for farrowing crates are specified in Division 4 of the Regulation. However, in a school environment, use of farrowing pens rather than crates is recommended.

Sows remain in the farrowing area nursing their piglets for about 3–5 weeks until the piglets are weaned.

After weaning, the sows are returned to the breeding area. The weaners are moved to clean, sterilised accommodation, often specially designed pens until 8-10 weeks of age. It is not advisable to wean pigs directly into grower pens unless the environment can be adjusted to suit them.

3.6 SUPERVISION AND MONITORING

Mechanical equipment essential to provide the basic feed, water and environmental needs of pigs must be inspected daily and maintained in good working order.

Pigs must be inspected, at least once a day, to assess health and wellbeing. Young piglets can dehydrate quickly and require more frequent monitoring. Inspections may be required more frequently when there is an

increased risk to welfare because of factors such as weather, recent movement and mixing of groups of pigs, outbreaks of disease, when behavioural vices or signs of aggression occur and when farrowing is expected. Feeding, watering and cleaning logs/schedules must be easily accessible, preferably displayed, for ease of monitoring.

Diligence in observation does not alter on weekends and holidays. Staff members need to be rostered to maintain observation schedule as per weekdays.

Staff should ensure that appropriate records are maintained.

3.7 HANDLING

Pigs need to be handled calmly, patiently and with care to prevent distress and injury to the animals and their handlers. Pigs can be driven and moved with minimal effort, if they are not hurried and can explore as they go. Refer to DAF Moving pigs and loading facilities for more information.

Pigs should be acclimatised to handling or trained to help make working with them more efficient and safer for them and the handlers. Good handling can benefit pig performance and profit by reducing fear and stress. Stressed pigs don't perform well and are more susceptible to diseases.

Key features to manage sociological stress factors, and facilitate quiet stress-free handling of pigs throughout the facility, include pen design, building layout, width of races, steepness and surfaces of ramps, the amount of space provided and location/layout of feed and water systems.

Please note: Pigs must not be restrained by tether nor led by the head. Electric prodders may only be used as a last resort to protect the safety of a person transporting a pig over 60kg. Dogs must not be used to move pigs.

3.8 MOVEMENT

Schools that own or keep one or more pigs are required to register as a biosecurity entity with Biosecurity Queensland. All landholders that have pigs on their property need to register for a property identification code with Biosecurity Queensland.

All pigs must be identified with brands or National Livestock Identification System (NLIS) approved ear tags before being moved from a property to another property where a change of ownership takes place, to saleyards, to abattoirs or to shows or events. Pigs over 30kg must be identified with a slap brand registered to the property.

PigPass is a national tracking system which provides real time information on the movements of all pigs in Australia. A PigPass National Vendor Declaration must be completed when moving pigs from a property.

For further information about recording pig movements, please refer to Moving pigs on the Queensland Government website.

3.9 TRANSPORT

The Regulation includes a compulsory code of practice for the transport of livestock at Schedule 3 (the Transport code).

All persons involved in the transport of livestock must ensure that they are aware of and comply with their obligations under this code.

The key features of the Transport code are detailed on the DAF website.

The Transport code applies to the transport process from animal assembly prior to loading to unloading at the final destination. It applies to commercial and non-commercial livestock.

General requirements for transporting all livestock are mandated in the Transport code and include fitness for transport, advice of estimated time of arrival, impact of extreme weather conditions, suitability of handling facilities and vehicles, ramp alignment, livestock handling, loading density, inspection duties and recordkeeping, use of prodders and dogs, and arrangements for distressed stock including killing.

Additionally, specific requirements for transporting certain animals are mandated. These include maximum journey time, spell duration and time off food and water. Requirements for pigs include, but are not limited to, the following:

- Prodders must not be used for pigs under 60kgs weight and must be used only as a last resort to protect the safety of a person transporting a pig over that weight.
- Pigs weighing less than 15kgs must not be lifted or carried by 1 leg.
- Euthanasia by blunt trauma is permitted for distressed piglets weighing under 15kgs.
- Maximum journey times, maximum time off water and minimum spell durations are specified. Despite the table below, the maximum journey time for a pig, other than one known or visually assessed to be more than 14 weeks pregnant, is 72 hours with the following conditions:
    - reasonable access to water and feed is given at least once every 24 hours of the journey
    - the vehicle has sufficient space for the pig to lie down
    - the pig is spelled for at least 24 hours before starting another journey.

Class of pig	Maximum hours journey time	Maximum hours off water	Minimum hours spell duration
Pigs known or visually assessed to be more than 14 weeks pregnant	4	4	24
Lactating pigs travelling with dependent young; Weaned pigs weighing less than 30 kilograms	12	12	12
Any other pig	24	24	12

3.10 DISEASE PREVENTION

Many infectious diseases can affect pigs. Moving pigs is the most common way to spread disease. Refer to DAF's advice to reduce the risk of disease when bringing pigs into the herd, including quarantining new stock for at least 30 days.

A property biosecurity plan must be developed to protect against pests, diseases and chemical residues.

Good hygiene, appropriate housing and preventing contact with other potentially-infected pigs can minimise the chances of diseases occurring.

Consult with your veterinarian to develop disease prevention and control measures, including internal and external parasite control programs, vaccination and monitoring. All activities should be documented in your school's animal activity register.

Pigs are commonly vaccinated against erysipelas, leptospirosis, E. coli and porcine parvovirus. Refer to DAF for signs, treatment and prevention of common diseases.

Sows' feet require regular inspection and treatment to avoid them becoming cracked and infected.

3.11 SIGNS OF ILLNESS

Stock health should be monitored at least daily and preferably more often.

A change in the pig's natural demeanour is often the first sign of illness. The animal may be listless or lethargic, or failing to thrive.

Closer examination may show variations in:

- gastrointestinal functions (e.g. diarrhoea)
- weight loss or loss of appetite
- urogenital functions (e.g. abortion, infertility or abnormal discharges)
- respiratory functions (e.g. persistent coughing, gasping or panting).

There may be evidence of:

- skin conditions (e.g. lesions, abnormal growths or red blotchy patches especially on the ears)
- a tucked up appearance, stiff gait or abnormal posture
- excessive scratching or rubbing
- swollen joints or limping.

Pigs are prone to arthritis, foot abscesses and minor wounds.

If you see any pigs with foot or mouth lesions or any other unusual signs of disease, or if a large number of animals are affected by disease, contact your local veterinarian or Biosecurity Queensland.

Sick pigs should be isolated from other pigs for treatment. If unable to identify and correct the cause of ill-health, assistance should be sought from a veterinarian who is familiar with pigs. Any signs of illness or injury, and treatments given, should be documented in the appropriate records.

Behavioural vices (e.g. ear, flank or tail biting; movements or behaviours that are abnormal, repetitive and seemingly have no function or goal) should also be identified and attention paid to management practices to address animal welfare. Consult your veterinarian for guidance.

3.12 ANIMAL EMERGENCY ARRANGEMENTS

The school must have an emergency management plan to deal with events in and out of school hours. Details of the plan will vary according to the needs of each school and must include:

- signage that includes emergency contacts, animal identification details
- monitoring of animals, including on weekends and school holidays
- a first aid kit for animals
- at least one local veterinarian on call
- strategies to withdraw individual animals (e.g. due to illness or death) or all stock (e.g. due to equipment issues, leaks, natural disasters, vandalism)
- arrangements for power outages (e.g. checking on back-up power, battery level checking)
- a list of who is competent to euthanase animals if necessary
- a schedule of persons authorised to respond to emergencies and engage veterinary assistance.

3.13 HUMANE KILLING AND EUTHANASIA

Where an animal has become so sick, diseased or injured that recovery is unlikely or undesirable on humane grounds, euthanasia must be arranged with a local veterinarian or a person competent in a technique specified in Appendix 5 of the Pig PISC Code.

The Transport code details arrangements for distressed stock including humane killing. Euthanasia by blunt trauma (by a suitably qualified person or a person acting under the direct supervision of a suitably qualified person) is permitted for distressed piglets weighing less than 15kg only.

Notify the QSAEC of deaths and other unexpected adverse events within 7 days of the incident's occurrence, using the Unexpected adverse event report. The signed hardcopy should be held in the school's animal activity register.

3.14 DISPOSAL – FATE PLANNING

Forward planning (e.g. how and when to retire an animal from the program) will support animal welfare and wellbeing and ensure that animals used are fit to fulfil the needs of the program.

Pigs can be sold privately, at auction or consigned to an abattoir. Carcasses must be disposed of in accordance with local council regulations.

All activities must be conducted in line with industry and veterinary standards. Chemicals and drugs used must be judged to be required by a qualified instructor, must be registered products, and must be used in accordance with Safety Data Sheet information and manufacturer's instructions.

Please note: Instructor:student and student:animal ratios cannot always be specified with accuracy given the wide variety of class sizes, student ages and settings in which activities are being conducted. While ratios stated in this document are suggested minimum requirements, careful consideration must be given to determine ratios that are most effective in supporting and safeguarding animal wellbeing.

NON-INVASIVE HUSBANDRY PROCEDURES

Activities 4.1 to 4.12 are non-invasive husbandry procedures that may be carried out by a competent person or under the direct supervision of a person who is competent to carry out the procedure, unless specified otherwise in the activity e.g. carried out by a suitably qualified person under Schedule 2 of the Regulation.

4.1 CAPTURE, RESTRAINT AND HANDLING

Category 3 – moderate to high impact				
Activity	Objective	3R activities	Ratios	References
Capture, restraint and handling	To instruct students in the appropriate methods of capture, restraint and handling of pigs in existing yard facilities	Step-by-step guides, modelling, videos, simulations	**Instructors:Students** 1:30 instructing 1:1 supervising **Students:Animals** 30:1 observing 2:1 performing	3.7 Handling; NSW Animals in Schools - Handling; Transport code

Ensure that students are calm, quiet and display non-aggressive behaviour when handling or capturing pigs.

When moving pigs, first prepare the movement path (with gates fixed into position as necessary), remove objects, ensure lighting is consistent (as pigs will baulk at sudden changes in lighting conditions).

The position of the handler in yards is extremely important to move pigs into a race or small pen with minimal stress. Never rush the pigs as they will become stressed and panic, form a scrum and become very unpredictable. Drive the pigs from behind using a stock board and handle pigs in a smaller group to reduce the potential for jamming. If the herd jams, don't force the pigs at the back but encourage those at the front to move. Alternatively, tickle or pat their sensitive backs. Avoid isolating pigs as they will become stressed and unpredictable. Never use a stick or hand to hit the pigs.

Consider what a pig's flight zone will be before handling it as this will dictate how close you should go to the pig to encourage it forward. It is always best to approach pigs slowly so that you can get an idea of how sensitive the individual animals will be to being handled.

Capture should be done quietly, quickly and firmly and every effort should be made to minimise the duration and amount of restraint, pain and distress to the pigs.

Pigs of different ages require different handling methods. Piglets can be caught from behind and lifted by one or both hind legs. A wall or corner can be used when handling middleweight animals. Older, full sized pigs are much harder to restrain and may require the use of a pig catcher.

Long periods of restraint are not recommended and often lead to loud squealing. Comfortable restraint will extend the capture time. Pigs must not be restrained by tethering.

4.2 ADMINISTRATION OF TREATMENTS

Category 3 – moderate to high impact				
Activity	Objective	3R activities	Ratios	References
Administration of injections and pour-on treatments	To instruct students in the administration of injections and pour-on treatments	Step-by-step guides, modelling, videos, simulations	**Instructors:Students** 1:30 instructing 1:2 supervising **Students:Animals** 30:1 observing 2:1 performing	4.1 Capture, restraint and handling; Safety Data Sheet/s

Administration of medicine by oral dosing, topical application to the skin or mixing with food is a prescribed non-invasive husbandry procedure under Schedule 2 of the Regulation and must be conducted by a competent person or person directly supervised by a competent person.

Administration of a vaccine or other medicine to a pig by injection must be carried out by a suitably qualified person or person under the direct supervision of a suitably qualified person, as defined under Schedule 2 of the Regulation.

It is important to maintain a program of vaccination and control of all internal and external parasites for all pigs. When treating for internal and external parasites, all animals should be treated at the same time. These programs need to be documented in the appropriate records.

When using vaccines, drenches or any other animal care chemicals, care must be taken to:

- read labels carefully and check expiry dates
- determine the weight of animals to calculate the correct dosage / rate
- adhere to withholding periods
- store chemicals/medications/bandaging appropriately
- use protective clothing when required.

Prior to the administration of treatments for pig diseases, including injections and pour-on treatments, ensure that each pig is adequately restrained. Iron injections, applied intramuscularly in the neck region, may be routinely carried out. Iron injections are not necessary for free-range pigs with access to soil.

For injections, ensure the needles are sharp and sterile. Injections can cause blemishes in pigs' skin, therefore the neck is recommended for injections into muscle. If administering multiple vaccines in one day, the injections should be given at different sites. Syringes must be cleaned by removing loose dirt and other organic matter with warm soapy water and sterilised with boiling water for 15 minutes or immersed in an approved disinfectant.

If using a bottled vaccine, use a sterilised needle to withdraw the vaccine into the syringe and use another needle to inject the pig. Once the injection is complete, remove the syringe before the plunger is released.

To administer oral medication, careful restraint is required to ensure the entire dose is swallowed. Smaller animals can be held in an upright position while larger animals need to be held with the head tilted slightly. Quick application means that prolonged restraint is unnecessary. Gravity-fed applications are most effective so tilting the animal's head helps.

4.3 COLLECTION OF FAECAL AND URINE SAMPLES

Category 2 - low impact				
Activity	Objective	3R activities	Ratios	References
Non-invasive collection of faecal and urine samples	To instruct students in the procedures for collection of urine and faecal samples	Step-by-step guides, modelling, videos, simulations	**Instructors:Students** 1:30 instructing 1:30 supervising **Students:Animals** 30:1 observing 30:1 performing	

Collection of faeces and urine should not require restraint as samples are readily available. Gloves should be worn and hands washed after completion of the activity.

4.4 COLLECTION OF SALIVA

Category 2 - low impact				
Activity	Objective	3R activities	Ratios	References
Collection of saliva samples	To instruct students in the procedures for collection of saliva samples	Step-by-step guides, modelling, videos, simulations	**Instructors:Students** 1:30 instructing 1:1 supervising **Students:Animals** 30:1 observing 1:1 performing	4.1 Capture, restraint and handling

This activity must be carried out by a suitably qualified person or person under the direct supervision of a suitably qualified person, as defined under Schedule 2 of the Regulation.

Collection of saliva may require the pig to be restrained using a farrowing crate. Only pigs that are accustomed to handling should be used.

4.5 BODY WEIGHT, CONDITION, GROWTH AND PROPORTIONS

Category 2 - low impact				
Activity	Objective	3R activities	Ratios	References
Measurement of body weight, condition, growth and proportions	To instruct students to measure body weight, condition, growth proportions	Step-by-step guides, modelling, videos, simulations	**Instructors:Students** 1:30 instructing 1:5 supervising **Students:Animals** 30:1 observing 5:1 performing	4.1 Capture, restraint and handling; Animal Care and Protection Regulation 2012 (Qld), Schedule 2 s.5

Growth rates and condition are measured to monitor animal health, determine nutritional needs, plan remedial actions and provide data for analysis and planning. To gain accurate measurements for comparison of on-farm performance of different breeders, all pigs should be tested under the same growing conditions to ensure that genetic differences in performance appear.

Only animals that are accustomed to handling should be used. The physical measurement of proportions and body weight should take a short period of time so that stress levels are reduced.

Piglets may be weighed using a supportive sling or container, depending on their size and age. Piglets can be held to allow measurements to be taken. This needs to be done quickly, as generally the piglets will squeal loudly, causing distress to the sow.

Larger animals can be held against a wall or corner for short periods of time. The use of measuring sticks and digital photography can increase the ease of measuring and recording. Pigs will need to be walked onto scales for weighing.

Measurement of a pig's back fat in a way that does not penetrate its skin is a prescribed non-invasive husbandry procedure under the Code of practice about pigs, Schedule 2 of the Regulation and can be carried out by a competent person or under the direct supervision of a competent person. The depth of back fat over the eye muscle is the best single measurement of lean meat content on pigs. The measurement is taken 65 mm down the left side from the midline at the level of the head of the last rib.

4.6 MEASUREMENT OF PULSE RATE, RESPIRATION AND SKIN TEMPERATURE

Category 2 – low impact				
Activity	Objective	3R activities	Ratios	References
Measurement of respiration, pulse rate and skin temperature	To instruct students in the measurement of pulse rate, respiration and skin temperature	Step-by-step guides, modelling, videos, simulations	**Instructors:Students** 1:30 instructing 1:2 supervising **Students:Animals** 30:1 observing 2:1 performing	4.1 Capture, restraint and handling

This activity must be carried out by a suitably qualified person or person under the direct supervision of a suitably qualified person, as defined under Schedule 2 of the Regulation.

Quick and accurate measurements can be obtained by confining a pig in a small area. Animals that are accustomed to handling should be used. A single animal will suffice however, a second pig allows comparisons to be made and improves the accuracy of results.

4.7 PREGNANCY DIAGNOSIS BY EXTERNAL ULTRASONIC EXAMINATION

Category 2 – low impact				
Activity	Objective	3R activities	Ratios	References
Pregnancy diagnosis by external ultrasonic examination	To instruct students in pregnancy diagnosis by external ultrasonic examination	Step-by-step guides, modelling, videos, simulations	**Instructors:Students** 1:30 instructing 1:1 supervising **Students:Animals** 30:1 observing 1:1 performing	4.1 Capture, restraint and handling Animal Care and Protection Regulation 2012 (Qld), Schedule 2 s.5

Pregnancy diagnosis by external ultrasonic examination is a prescribed non-invasive husbandry procedure under the Code of practice about pigs, Schedule 2 of the Regulation and can be carried out by a competent person or under the direct supervision of a competent person.

4.8 FARROWING AND WEANING

Category 3 – moderate to high impact				
Activity	Objective	3R activities	Ratios	References
Farrowing and weaning	To instruct students in farrowing and weaning	Step-by-step guides, modelling, videos, simulations	**Instructors:Students** 1:30 instructing **Students:Animals** 30:1 observing	Pig PISC code s.5.3; Companion Handbook to the Model Code of Practice for the Welfare of Pigs (3rd ed.); Basic pig husbandry - the litter; Basic pig husbandry - the weaner Piglet rearing

Sows should be provided with a suitable, separate farrowing area before the litter is due, to allow them to become accustomed to their surroundings. Straw bedding can be given. Veterinary assistance should be sought if a sow encounters farrowing problems, or any post-farrowing problems such as fever, shutdown of milk production or letdown, and constipation.

The farrowing pen should allow a safe creep area for piglets, reducing the chance of injury or death due to squashing. Providing guard rails around the edges of the pen assists in providing an escape route for the piglets if the sow suddenly lies down. Piglets are extremely susceptible to cold, damp conditions and must be

born into a warm environment. However, they also need sufficient space to enable them to get away from the heat source when they wish. Watch how the pigs are lying – if huddled they are cold, if spread apart they are too hot.

The main cause of piglet death is starvation due to failure to suckle because of low viability or low birth weight. Refer to Basic pig husbandry – the litter for information about assisting weak piglets.

All piglets must be checked within 24 hours of birth to see that they are feeding, to ensure that the piglets have had the opportunity to receive colostrum, or are provided with an appropriate substitute. If piglets are born with abnormalities, for example splaylegged piglets, vet advice should be sought for treatment.

Newborns lack enough iron to maintain satisfactory blood levels of haemoglobin and must obtain sufficient iron from elsewhere. Iron supplements for piglets are usually administered prior to 3 days of age as they are born with sufficient iron to last only 3-7 days. Under natural conditions, piglets may obtain enough iron from soil, however as they are now generally reared indoors, they require iron supplements until weaning. Refer to Piglet anaemia for further information on administering iron supplements.

If a sow dies prior to weaning or piglets are receiving inadequate nutrition, the piglets must be fostered, weaned, hand reared or euthanased.

Conventional weaning occurs from 3-5 weeks of age. Pigs are 5-10kg and of a size and age to fend for themselves under average farm conditions. A critical factor in problems associated with weaning is the amount of creep feed consumed prior to weaning. Apart from getting piglets familiar with dry feed, feeding creep diets accelerates the maturity of the digestive system.

Weaning is a particularly stressful time for the sow. Both sow and piglets need special care and attention. For weaning of pigs under three weeks of age, management and nutrition need to be of a very high standard to prevent piglet mortality and ill-thrift (wasting).

4.9 HAND REARING PIGLETS

Category 3 – moderate to high impact				
Activity	Objective	3R activities	Ratios	References
Hand rearing piglets	To instruct students in hand rearing piglets	Step-by-step guides, modelling, videos, simulations	**Instructors:Students** 1:30 instructing 1:5 supervising **Students:Animals** 30:1 observing 1:1 performing	NSW Animals in Schools - Piglets and weaners; Basic pig husbandry - the litter

Piglets must receive colostrum within the first 24 hours. In cases where piglets cannot be raised by their mothers (e.g. surplus piglets, orphans or slow growers), hand raising is required. This is time and labour intensive. Appropriate milk replacer must be used with a suitable feeding schedule (usually every 3–4 hours for the first few days and 3-4 times a day until weaning). It is very important to keep the piglet warm, using a heat lamp or heat pack. A high level of hygiene, particularly involving bottles and teats, is vital to avoid contamination. The piglets' weight gain must be closely monitored and if scouring occurs, seek veterinary advice.

When piglets are around 3kg live weight, they can be transferred to milk-based solid feed. Temperatures should be kept at 35°C and then progressively reduced until the temperature is 29°C at 5kg bodyweight.

4.10 MILK COLLECTION

Category 2 – low impact				
Activity	Objective	3R activities	Ratios	References
Collection of milk	To instruct students in the collection of milk (colostrum)	Step-by-step guides, modelling, videos, simulations	**Instructors:Students** 1:30 instructing 1:1 supervising **Students:Animals** 30:1 observing 2:1 performing	4.1 Capture, restraint and handling

This activity must be carried out by a suitably qualified person or person under the direct supervision of a suitably qualified person, as defined under Schedule 2 of the Regulation.

Collection of milk may require the pig to be restrained using a farrowing crate. Only pigs that are accustomed to handling should be used. Milk is usually collected so that frozen colostrum can be stored for orphan piglets. A single animal is adequate however, in order to obtain enough samples of colostrum, several animals, in a variety of physiological states, may be required. Artificial colostrum products can be purchased commercially.

4.11 LOADING

Category 3 – moderate to high impact				
Activity	Objective	3R activities	Ratios	References
Loading	To demonstrate the loading of pigs in a safe and humane manner	Step-by-step guides, modelling, videos, simulations	**Instructors:Students** 1:30 instructing 1:15 supervising **Students:Animals** 30:1 observing 2:1 performing	3.9 Transport; Transport code; NSW Animals in Schools - Pigs

The handling and loading of livestock is regulated by the Transport code. Pigs should always be handled quietly and patiently, especially in new environments and always moved with a stock board. If pigs show signs of stress including lying down, panting, trembling and a blotchy skin appearance, they should be allowed time to rest and relax before being transported or moved.

4.12 TRANSPORT

Category 3 - moderate to high impact				
Activity	Objective	3R activities	Ratios	References
Transport	To demonstrate to students the appropriate procedures for transporting pigs	Step-by-step guides, modelling, videos, simulations	**Instructors:Students** 1:30 instructing **Students:Animals** 30:1 observing	3.9 Transport; Transport code; NSW Animals in Schools - Pigs

All persons involved in the transport of livestock must ensure that they are aware of and comply with their obligations under the Transport code.

Pigs need to be transported using an appropriate vehicle. It is very important not to overcrowd pigs when transporting them. Care must be taken to avoid transporting pigs during high temperatures, as they cannot sweat to regulate their body temperature, making them very susceptible to heat stress. Transporting them during hot or humid conditions can be very dangerous to their health.

Transport should occur early in the morning or late in the afternoon and stocking densities should be lowered by 10% if the temperature is above 25°C. Vehicles used for transport of pigs must be constructed from materials that allow thorough cleaning. Floors should have a non-slip surface that does not injure hooves or legs. Pigs have very sensitive skin so transport vehicles must be covered.

Prodders must not be used for pigs under 60kg and must be used only as a last resort to protect the safety of a person transporting a pig over that weight. Pigs weighing less than 15kgs must not be lifted or carried by 1 leg. The Transport code details arrangements for distressed stock including humane killing. Euthanasia by blunt trauma (by a suitably qualified person or a person acting under the direct supervision of a suitably qualified person) is permitted for distressed piglets weighing less than 15kg only.

INVASIVE HUSBANDRY PROCEDURES

Activities 4.13 to 4.20 are invasive husbandry procedures that must be carried out by a suitably qualified person or person under the direct supervision of a suitably qualified person, as defined under Schedule 2 of the Regulation.

4.13 ARTIFICIAL INSEMINATION

Category 3 – moderate to high impact				
Activity	Objective	3R activities	Ratios	References
Artificial insemination	To demonstrate artificial insemination practices to students	Step-by-step guides, modelling, videos, simulations	**Instructors:Students** 1:30 instructing 1:1 performing **Students:Animals** 30:1 observing 2:1 performing	Inseminating sows (AI); Basic pig husbandry - gilts and sows

This activity is only to be conducted for students undertaking specific units of a Certificate course with a registered training organisation, requiring instruction in artificial insemination. Students must receive suitable specialised instruction and training leading to competency before commencing. The technique may be practised on abattoir specimens.

Successful insemination hinges on detecting oestrus in the sow, correctly timing the insemination, using the right technique and correct storage and handling of semen.

During her 50–60 hours oestrus, the sow will mate but she is only highly fertile for 24–32 hours. Test the sow for 'standing' reaction twice daily (she 'stands' more readily to back pressure when she can see, hear and smell a mature boar and be touched by him).

Inseminate twice (8–12 hours after the handler first gets the 'standing' reaction and again 8–16 hours later).

If only inseminating once, it should be done 24–32 hours after the onset of 'standing' heat. In practice, where checking for 'standing' heat twice daily, inseminate about 24 hours after the sow 'stands' to back pressure.

Refer to DAF's Inseminating sows (AI) for detailed instructions for the technique and care of equipment.

After the activity, check sows twice daily for the first two days and once daily for a further 5 days. Records must be kept for individual sows of the incidence of discharge, other abnormal event or behaviour, or any treatment administered.

4.14 EAR MARKING AND TAGGING

Category 3 – moderate to high impact				
Activity	Objective	3R activities	Ratios	References
Ear marking and tagging	To instruct students in ear marking and tagging	Step-by-step guides, modelling, videos, simulations	**Instructors:Students** 1:30 instructing 1:1 supervising **Students:Animals** 30:1 observing 1:1 performing	4.1 Capture, restraint and handling; Pig PISC code s.5.6.17-18; Identification for on farm management

Refer to Identification for on farm management for information on ear notching, tattooing and tagging to identify individual animals for accurate performance records. As schools generally keep only a small number of pigs, ear tagging, rather than ear notching or tattooing, is the recommended method.

Most schools tend to use ear tags that are placed in the ear using a gun applicator. Pigs should be tagged after weaning with the animal restrained in a comfortable position that reduces head movement. Application is quick and simple. Ear tag pliers cause minimal stress due to the speed of the operation.

Ear notching should be avoided where possible and, if performed, should be carried out before piglets are seven days of age.

4.15 BRANDING

Category 2 – low impact				
Activity	Objective	3R activities	Ratios	References
Application of tattoo for branding	To instruct students in tattoo application for the purpose of identifying individual animals in a herd situation	Step-by-step guides, modelling, videos, simulations	**Instructors:Students** 1:30 instructing 1:1 supervising **Students:Animals** 30:1 observing 1:1 performing	Pigs - brand tattoos

All pigs over 30kg (live weight) must be tattooed with your registered swine brand number issued by DAF. Owners of 2 or less pigs (including the pigs in the consignment) are exempt from branding requirements in Queensland however producers still need to brand all pigs sold for slaughter at commercial abattoirs.

Branding is quick and generally does not require pigs to be restrained. Pigs can be tattoo branded in their normal grower pens as tattoo branding relies on the element of surprise. Smother the number with tattoo ink and slap the tattoo iron onto the pig's rump and shoulder. The pig feels slight discomfort as effective tattooing requires reasonable force to be applied. If you are too gentle, a second attempt may be required, creating unnecessary stress for the pig. Clean and sterile applicators should be used. Follow the animal until the rump or shoulder is exposed, then swing the iron onto the target area. After tattooing, remove the iron, re-ink and move to the next animal. Small holding pens are ideal as there is no need to chase the animals.

Refer to Pigs - brand tattoos and Australian Pork Fact Sheet for further information on tattoo branding, including equipment required.

4.16 TEETH CLIPPING OF PIGLETS

Category 3 - moderate to high impact				
Activity	Objective	3R activities	Ratios	References
Teeth clipping of piglets	To demonstrate teeth clipping of piglets	Step-by-step guides, modelling, videos, simulations, demonstration on stillborn piglets	**Instructors:Students** 1:30 instructing **Students:Animals** 30:1 observing	Pig PISC code s.5.6; Animal Care and Protection Regulation 2012 (Qld), Schedule 2 s. 7; Teeth clipping

Teeth clipping is done to reduce the chance of piglets injuring the sow or each other. Seek advice from a veterinarian about whether needle teeth need to be clipped. This procedure should only be done when unacceptable injury is occurring to littermates and the sow's udder. Such injury generally would be evident as multiple lacerations on either the sow's udder or littermates. If it is to be done, it should be carried out within three days of birth. Holding the piglet behind the neck will cause it to automatically open its mouth. Only the tips of the teeth should be removed. Care needs to be taken not to cut the gum as this can cause abscessation. Instruments should be disinfected between piglets.

4.17 CASTRATION

Category 3 - moderate to high impact				
Activity	Objective	3R activities	Ratios	References
Castration of piglets	To demonstrate castration of piglets to students	Step-by-step guides, modelling, videos, simulations, demonstration on stillborn piglets	**Instructors:Students** 1:30 instructing **Students:Animals** 30:1 observing	Pig PISC code s.5.6; Animal Care and Protection Regulation 2012 (Qld), Schedule 2 s. 7; Basic pig husbandry - the litter

Surgical castration may be considered necessary for market and consumer requirements to be met. It is recommended that piglets be castrated after 2 days of age, after they have established their suckling order, and before 7 days of age. When piglets 8-21 days of age are castrated, appropriate and effective restraint is necessary.

Surgical castration requires the use of a sterile sharp implement such as a knife or surgical scalpel, with the piglet adequately restrained. A high degree of cleanliness, particularly the pen into which the piglets will be placed after the operation is essential, as well as good post-operative drainage of the surgical wound. Refer to Basic pig husbandry - the litter for further information on castration preparation, equipment, procedure, and after-treatment and care.

Surgical castration of male pigs older than 21 days or surgical procedures that render a male pig over 21 days of age sterile must be performed under anaesthesia and by a veterinary practitioner.

4.18 TAIL DOCKING

Category 3 - moderate to high impact				
Activity	Objective	3R activities	Ratios	References
Tail docking of piglets	To demonstrate tail docking of piglets to students	Step-by-step guides, modelling, videos, simulations, demonstration on stillborn piglets	**Instructors:Students** 1:30 instructing **Students:Animals** 30:1 observing	Pig PISC code s.5.6; Animal Care and Protection Regulation 2012 (Qld), Schedule 2 s. 7; Basic pig husbandry - the litter

Tail docking should be avoided wherever possible. However, tail docking may be performed to prevent tail biting. If a tail becomes infected from tail biting complications can arise and it can seriously affect growth rates and result in the death of pigs.The cause of tail biting is largely unknown but stress factors are blamed. Where tail biting is a problem, all aspects of the environment, feeding and management should be investigated to identify the contributing factors so that remedial action can be taken, e.g. environmental enrichments with straw or other materials that can be manipulated.

Where tail docking is practised as a preventative measure, it should be carried out before piglets are 7 days of age, preferably at 1-2 days of age. Tail docking involves the removal of part of the piglet's tail and should leave a stump of at least 2cm in length. Refer to Basic pig husbandry - the litter for further information on tail docking.

Tail docking of piglets over 7 days of age should be performed only in an emergency.

4.19 NOSE RINGING

Category 3 - moderate to high impact				
Activity	Objective	3R activities	Ratios	References
Nose ringing	To demonstrate nose ringing procedure to students	Step-by-step guides, modelling, videos, simulations, demonstration on stillborn piglets	**Instructors:Students** 1:30 instructing **Students:Animals** 30:1 observing	Pig PISC code s.5.6; Animal Care and Protection Regulation 2012 (Qld), Schedule 2 s. 7;

Nose ringing should be avoided. However, this procedure may need to be performed as a last resort, to prevent adverse effects to the environment, if pigs are kept on pasture. Nose rings should be placed through the cartilage of the top of the snout or the tissues separating the nostrils. Provision of adequate substrate or pasture for chewing can provide for exploratory or foraging behaviour and deter pigs from rooting up ground excessively.

4.20 TUSK TRIMMING

Category 3 - moderate to high impact				
Activity	Objective	3R activities	Ratios	References
Tusk trimming	To demonstrate tusk trimming procedure to students	Step-by-step guides, modelling, videos, simulations, demonstration on stillborn piglets	**Instructors:Students** 1:30 instructing **Students:Animals** 30:1 observing	Pig PISC code s.5.6; Animal Care and Protection Regulation 2012 (Qld), Schedule 2 s. 7;

Tusk trimming of boars is necessary where injury to humans or animals is likely to occur. Tusk trimming should be conducted using embryotomy wire. The boar should be appropriately restrained and, if necessary, anaesthetised for restraint. Analgesia is not required as the tusk lacks sensory nerves. Tusks should be severed cleanly above the level of the gums without causing damage to other tissues.

SECTION 5 | GLOSSARY

3R activities	Animals used for teaching and training are not being used to discover, prove or develop new ideas and techniques but to communicate scientific concepts and to develop manual skills and expertise in specific techniques. 3R activities provide opportunities to communicate scientific concepts and develop technical skills and expertise, ensuring animals are used only when necessary and minimising the impact on animals used.
Alternatives to animal use	Replacement of animals with other methods/activities for educative purposes must be sought and used whenever possible.
Code of practice about pigs	Animal Care and Protection Regulation 2012 (Qld), Schedule 2
DAF	Queensland Department of Agriculture and Fisheries
Pig PISC code	*Model Code of Practice for the Welfare of Animals – Pigs*, 3rd edition, Primary Industries Standing Committee, PISC Report 92, 2008
QSAEC	Queensland Schools Animal Ethics Committee
Supervision	Supervision in all instances means supervision by a suitably qualified person familiar with the procedures as well as normal and abnormal animal responses.
The Code	*Australian code for the care and use of animals for scientific purposes*, 8th edition 2013 (updated 2021)
The Regulation	Animal Care and Protection Regulation 2012 (Qld)
Transport code	Code of practice for transport of livestock, Animal Care and Protection Regulation 2012 (Qld), Schedule 3

SECTION 6 | REFERENCES

- Animals in Schools – Pigs, NSW Department of Education, NSW Catholic Education Commission, Association of Independent Schools of NSW
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  http://australianpork.com.au

- Australian Pork Limited - Companion Handbook to the Model Code of Practice for the Welfare of Pigs (3rd ed.), 1st edition, 2010
  http://australianpork.com.au/wp-content/uploads/2013/10/APL_Companion-HandBook-to-the-Model-Code-of-Practice_2010.pdf

- Australian Veterinary Association – Sow housing
  http://www.ava.com.au/policy/92-sow-housing

- Business Queensland – Pigs
  https://www.business.qld.gov.au/industries/farms-fishing-forestry/agriculture/livestock/pigs

- *Model Code of Practice for the Welfare of Animals – Pigs*, 3rd edition, PISC Report 92, 2008 (Pig PISC Code)
  http://www.publish.csiro.au/book/5698

- NSW Department of Primary Industries – Pigs
  http://www.dpi.nsw.gov.au/animals-and-livestock/pigs

- Queensland Department of Agriculture and Fisheries – Pig Production
  https://www.daf.qld.gov.au/business-priorities/agriculture/animals/pigs

PIGS STANDARD OPERATING PROCEDURE

APPLICATION/ACTIVITY NOTIFICATION FORM

SCHOOL			
ACTIVITY LEADER'S NAME			
ACTIVITY LEADER QUALIFICATIONS	Tick whichever is appropriate to qualify you as 'suitably qualified' to carry out pig husbandry procedures under the Code of practice about pigs (Refer Section 2: Qualifications, skills and experience) ☐ I am a veterinary surgeon. ☐ A registered training organisation has issued me the appropriate qualification or equivalent. ☐ I have at least 12 months practical training and experience at a pig establishment that complied with an industry recognised quality assurance program or had in place an industry recognised herd health program for pigs at the establishment.		
PHONE		EMAIL	
SCHOOLING SECTOR/ SCIENTIFIC USER REGISTRATION NUMBER (ISSUED BY DAF)			
☐ STATE SCHOOL SUR000102	☐ QCEC	☐ ISQ	
ACTIVITY TITLE			
CURRICULUM REFERENCE (PEDAGOGICAL JUSTIFICATION)		YEAR LEVEL/S	
SPECIES OF ANIMAL/S		NUMBER OF ANIMALS	

DECLARATION BY THE ACTIVITY LEADER

I acknowledge that I am the teacher appointed/authorised teacher representative who will conduct animal-use activities. In that capacity I agree that:

- I and all others involved are familiar, and will comply, with the *Animal Care and Protection Act 2001* (Qld), the Animal Care and Protection Regulation 2012 (Qld) and the *Australian code for the care and use of animals for scientific purposes,* 8th edition 2013 (updated 2021).
- I have read and understood Responsibilities of school personnel under the Code.
- No animal will be used in this activity except as described in this SOP and application.
- Adequate resources will be available to undertake the project.
- Health risks and infection controls have been considered and assessed.
- All staff members and students involved in animal use activities are competent to perform the necessary tasks with care and knowledge of their ethical and legal responsibilities and the conditions imposed by the SOP.
- **Unexpected adverse events will be reported within 7 days of occurrence as per the conditions described in this SOP.**

I agree that I have considered the 3Rs of animal welfare:

- **replacement** of animals with other methods (alternatives)
- **reduction** in numbers of animals used
- **refinement** of techniques used, in order to reduce adverse impacts on animals.

ACTIVITY LEADER'S SIGNATURE		
PRINCIPAL'S NAME		☐ I have read and approved this application. ☐ A record of this application will be held for 7 years for audit purposes.
PRINCIPAL'S SIGNATURE		
DATE	/ /	

All fields must be complete before lodging this form.

Email this **signed Application/Activity Notification Form only** to animal.ethics@qed.qld.gov.au.

Ensure that you keep a signed copy of this application on file in your school's animal register for auditing purposes.

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