

**Model Code of Practice
for the Welfare of
Animals
–Pigs (revised)**

Consultation Draft

PREFACE

This Australian Model Code of Practice for the Welfare of Animals has been prepared by the Animal Welfare Working Group (AWWG) within the Primary Industries Ministerial Council (PIMC) committee system. Membership of AWWG comprises representatives from each of the State Departments with responsibility for agriculture, CSIRO, and the Department of Agriculture, Fisheries and Forestry - Australia. Extensive consultation has taken place with industry and animal welfare organisations in the development of the code.

This Model Code of Practice is based on the first edition that was endorsed by the Australian Agricultural Council (AAC) as a national code at its 132nd meeting in July 1989.

The following model codes of practice have been endorsed by PIMC (and its predecessors, ARMCANZ and the Australian Agricultural Council).

- Animals at Saleyards (1991)
- Buffalo, Farmed (1995)
- Camel, The (1997)
- Cattle (1992)
- Cattle, Land Transport of (1999)
- Deer, Farming of (1991)
- Emus, Husbandry of Captive-Bred (1999)
- Feral Animals, Killing or capture, Handling and Marketing of (1991)
- Goat, The (1991)
- Horses, Land Transport of (1997)
- Livestock, Air Transport of (1986)
- Livestock, Rail Transport of (1983)
- Livestock, Road Transport of (1983)
- Livestock, Sea Transport of (1987)
- Livestock at Slaughtering Establishments (2001)
- Ostrich, Farming of (2003)
- Pigs (2nd Edition) (1998)
- Pigs, Land Transport of (1997)
- Poultry, The Domestic (4th Edition) (2001)
- Poultry, Land Transport of (1998)
- Rabbits, Intensive Husbandry of (1991)
- Sheep, The (1991)
- Saleyards, Animals at (1991)
- Slaughtering Establishments, Livestock at (2001)

and in conjunction with the National Health and Medical Research Council, the CSIRO, Australian Research Council and Australian Vice-Chancellors' Committee.

Australian Code of Practice for the Care and Use of Animals for Scientific Purposes (7th Edition 2004).

Model Code of Practice for the Welfare of Animals – Pigs (revised)

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<http://www.publish.csiro.au/nid/18/bcid/65.htm>)

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1.0 Introduction

1.1 The *Model Code of Practice for the Welfare of Animals – Pigs* (The Code) is intended as a guide for all people responsible for the welfare of pigs under both intensive and extensive systems. It recognises that the basic requirement for the welfare of pigs is a husbandry system, managed by trained and skilled stock-people, appropriate to their physical, health and behavioural needs.

The basic needs of pigs are:

- Readily accessible appropriate and sufficient food and water;
- Adequate shelter to protect from climatic extremes;
- Opportunity to display appropriate patterns of behaviour;
- Physical handling in a manner which minimises the likelihood of unreasonable or unnecessary pain or distress;
- Protection from, and/or rapid diagnosis and correct treatment of, any significant injury or disease.
- Freedom for necessary movement including to stand, stretch, and lie down
- Visual and social contact with other pigs.

1.2 The Code is based on the knowledge and technology available at the time of publication and will be updated as knowledge and technology evolves. Whilst it outlines important aspects to be taken into account in ensuring the welfare of pigs, the need for experience and commonsense in the husbandry of animals is also emphasised.

1.3 The Minimum Standards in this code form the basis for an assessment of compliance with good welfare. The code may be used as a reference for auditors and inspectors who are trained and competent to examine and judge the welfare of pigs. Information provided under the headings of Recommended best practice and General information is provided as a guide.

2.0 Competence and Responsibility of the Stockperson

Introduction

Minimum Standard

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| 2.1 | Persons responsible for the day-to-day needs of pigs must ensure appropriate care for animals under their control. |
| 2.2 | Pigs must be cared for by personnel who have been trained in pig husbandry and are competent to maintain the health and welfare of the animals in accordance with the Minimum Standards listed in this Code, or are under the direct supervision of such personnel. |

Recommended Best Practice

- 2.3 Personnel should be provided with adequate time for the inspection of pigs and the checking of equipment. Personnel in charge of the pigs should be able to recognise early signs of distress or disease so that prompt action is taken or advice sought
- 2.4 Personnel should be appropriately instructed on how their actions may affect a pig's welfare.
- 2.5 Personnel should undergo formal training or be trained "on the job" under supervision by experienced supervisors within the first 6 months of employment. Thereafter training should be conducted on a regular basis.

3.0 Food and Water

3.1 Food

Minimum Standard

- 3.1.1 Pigs must have daily access to feed that is nutritionally adequate, maintains health and meets the requirements for maintenance, growth, pregnancy and lactation.
- 3.1.2 Access to feed must be provided in such a way as to prevent undue competition, aggression or injury.
- 3.1.3 If body condition score of a pig falls below 2.5 (on the scale of 1-5, Appendix 1), remedial action must be taken.
- 3.1.4 Pigs must not be maintained at a body condition score of below 2.

Recommended Best Practice

- 3.1.5 Automated feeding systems should allow animals access to feeders in a manner that minimises intimidation, bullying and aggression from other pigs.
- 3.1.6 Food provided should be fresh, palatable, and free of any gross contaminants, or physical or toxic substances or micro-organisms that could cause harm.
- 3.1.7 There should be contingencies to provide an alternative means of obtaining and delivering feed, in case of supply failure or delays in delivery.
- 3.1.8 Pregnant sows should be given sufficient bulky or high fibre feed to satisfy appetite. The feed intake for dry sows needs to satisfy appetite without causing the sow to become overweight.
- 3.1.9 Medicated feed should only be used on competent professional advice.

- 3.1.10 Condition scoring is recommended as a guide to assessing the adequacy of nutrition, health and productivity for animal welfare. A guide to condition scoring of pigs is given in Appendix I.
- :Body score of grower and finisher animals and boars should be 3 or above.
 - :Body score of breeding sows at farrowing should be 3.5 – 4.
 - :Body score of breeding sows at weaning should be 3 or more.

General information

- 3.1.11 Body condition scores need to be interpreted alongside other physical, behavioural and productivity parameters to determine if acceptable welfare outcomes are being obtained.

3.2 Water

Minimum Standard

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| <p>3.2.1 Drinkable water and/or another wholesome liquid must be easily available to pigs in sufficient quantities to meet the physiological water needs of the pigs at all times.</p> |
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Recommended Best Practice

- 3.2.2 Medicated water should only be used on competent professional advice; the overuse or mixing of medication, or the medication itself, may cause toxic injury.
- 3.2.3 Water provided should be fresh, palatable¹, and at a temperature that does not inhibit drinking.
- 3.2.4 Drinker allocation per pen group and drinker design and flow rates should be such that water requirements of different classes of pig are easily met.

General Information

- 3.2.5 When a piggery is first established, or a new water source obtained, the water can be tested for mineral content and microbiological contamination, and advice obtained on its suitability for pigs from a suitably qualified testing laboratory and/or professional pig adviser.
- 3.2.6 Where wholesome liquid products are used as both a food and water source (e.g. whey) advice can be obtained from a veterinarian or other suitably qualified adviser on the suitability of the product for that dual purpose.
- 3.2.7 The daily consumption of water (or other wholesome liquid) by a pig will vary according to environmental temperature, diet ingredients and live-weight. Water intake increases substantially at

¹ Reference: Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC & ARMCANZ), paper 4 – Vol 3 October 2000, ISBN 09578245 0 5

temperatures above 30⁰ C. Keeping drinking water temperature below 20⁰ C will assist in ensuring adequate intake during hot conditions. The table in Appendix II shows the typical daily water requirements for various classes of pig.

- 3.2.8 Disinfection of drinking water may be recommended in some circumstances to prevent introduction of diseases. This should be undertaken only according to the instructions of a veterinarian or other suitably qualified adviser.

4.0 Accommodation

Construction or redesign of housing should be based on expert advice. Housing should meet animal welfare, environmental, and operator health and safety requirements whilst being economic to operate and maintain. Pig housing and facilities should be cross-checked for compliance with the minimum standards of this code.

4.1 Accommodation systems

Pigs are currently raised under systems falling into 3 main categories:

- Indoor intensive: (including single and group housing on solid or slatted floors);
- Semi-indoor extensive (groups on deep litter in shelters or barns)
- Outdoor (free range in paddocks with shelter such as arcs or huts.)

Minimum Standards

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| <p>4.1.1 Accommodation for pigs must provide protection from extremes of weather, not cause injury and not predispose them to disease.</p> <p>4.1.2 A stock-person responsible for sows and gilts kept in group accommodation must ensure that persistent bullying leading to severe injuries and deprivation from food and water does not occur.</p> <p>4.1.3 Pigs accommodated individually in stalls must be able to stand, get up and lie down without being impeded by the bars and fittings of the stall, lie with limbs extended, to stretch and to be able to freely undertake such movements.</p> <p>4.1.4 Stall and farrowing crate design must not cause injury to pigs and must minimise aggressive physical interactions between pigs (stalls) and overlying of piglets by sows (farrowing crates).</p> <p>4.1.5 Space allowance and facilities provided for lactating sows must not adversely affect piglet welfare.</p> <p>4.1.6 From 10 years after making of the code a sow must not be confined in a stall for more than 6 weeks of her gestation period.</p> <p>4.1.7 Sows confined in farrowing crates must not be confined in these for more than 6 weeks in any one reproductive cycle, except in an</p> |
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emergency situations where a sow may be required to foster a second litter for a short period after her own piglets are weaned. In such an exceptional situation the stock-person must take additional care.

- 4.1.8 All sow stalls and farrowing crates must also provide at least the recommended minimum space requirements given in appendix III.
- 4.1.9 If boars are kept in stalls they must be released for exercise at least twice weekly.
- 4.1.10 Tethers must not be used to restrain pigs

Recommended Best Practice

- 4.1.11 Pigs kept in groups in pens require sufficient space for each to sleep, access feed and dung
- 4.1.12 Dimensions and design requirements for individual stalls and farrowing crates are given in Appendix III.
- 4.1.13 Housing systems for sows that allow more freedom of movement and improved welfare outcomes compared to conventional stalls and farrowing crates should be adopted.
- 4.1.14 In combination stall/group systems for dry sows and gilts bullying and deprivation of food can be a problem and should be monitored and managed by a competent stock person.
- 4.1.15 Where individual quarters are provided for dry sows and gilts the partitions should prevent aggressive behaviour while still enabling them to see each other.

General Information

- 4.1.12 Reduction of aggression problems can occur in group housing accommodation that may be assisted by adopting some or all of the following measures under the advice of suitably qualified advisers-
 - ❑ Culling of over-aggressive lines of pigs;
 - ❑ Drafting out of subordinate sows;
 - ❑ Grading for size evenness;
 - ❑ Keeping groups stable;
 - ❑ Providing environmental complexity (e.g. provision of straw);
 - ❑ Provision of escape areas for bullied sows;
 - ❑ Provision of adequate drinking points
 - ❑ Feeding systems that minimise competition between pigs for feed at feeding times e.g. trickle feeding, individual feeding stalls for sows;
 - ❑ Optimising pen size, shape/design and group numbers;

- ❑ Minimising the mixing of unfamiliar pigs;
 - ❑ Castration of males;
 - ❑ Mixing of pigs, especially adult sows and boars, is a major cause of aggression in group housing. This may be reduced at the time of mixing by introduction of new or re-entering sows in groups of 5 or more to larger groups of sows rather than individually;
 - ❑ Grouping after dark;
 - ❑ Providing free access to feed
 - ❑ Using masking odours on all pigs in the group;
 - ❑ Use of chemical sedation.
- 4.1.13 Floors should be installed and maintained in a way that minimises the risk of injury and allows pigs to stand normally.
- 4.1.14 Solid surfaces that pigs have access to should be made of materials that may be readily cleaned and disinfected. Bedding materials should be replaced or cleaned at intervals that ensure hygiene and comfort needs are met and avoid compromise to welfare, for example, scalding and lameness.
- 4.1.15 The provision of straw to permit foraging behaviour and provide physical and thermal comfort when lying down is encouraged, provided that this is compatible with drainage and hygiene requirements.
- 4.1.16 Boars can be kept in compatible groups to permit regular exercise (see Table 2). They can be kept with groups of gilts or sows provided that persistent bullying or excessive unwanted mounting behaviours do not occur.

4.2 Equipment

Minimum Standards

- 4.2.1 Mechanical equipment essential to meeting the basic feed, water and environmental requirements of pigs must be inspected daily and kept in good working order.
- 4.2.2 Equipment to which pigs have access must be designed and maintained so as to avoid injury to the pigs.
- 4.2.3 In case of breakdown of mechanical equipment, alternative ways of providing feed and water and of maintaining a satisfactory environment must be available.
- 4.2.4 Sheds with automatically controlled ventilation systems (i.e. shutters or fans controlled by temperature sensors) must have fail-

safe backups that enable sheds to be ventilated if power failure occurs.

- 4.2.5 Stock-persons must be trained to operate essential mechanical equipment and associated backup systems.

Recommended Best Practice

- 4.2.6 Electrical installations at mains voltage should be inaccessible to pigs, and properly earthed.
- 4.2.7 Staff skilled in the correct operation of systems (including backup systems) involving a high degree of control over the environment, including automated or mechanical feed delivery systems, should be available to operate such systems at all times.

4.3 Environment

Minimum Standard

- 4.3.1 Pig sheds must have sufficient light available to enable inspection of all pigs.
- 4.3.2 Natural or artificial light of at least 20 lux must be available at pig level in all buildings for a minimum of nine hours daily.
- 4.3.3 Ventilation must be sufficient to prevent build-up of harmful concentrations of gasses.
- 4.3.4 If the ambient temperature exceeds 35C, pigs must be inspected at least twice in the hottest part of the day and corrective action taken to cool any distressed pigs
- 4.3.5 Suckling piglets under 3 weeks of age and weaners must be provided with temperatures controlled to be at their optimum comfort ranges as in Appendix 4.

Recommended Best Practice

- 4.3.6 Equipment to routinely measure and record maximum and minimum air temperatures at pig level must be available in all sheds.
- 4.3.7 Cold-stress in newborn piglets should be avoided through the provision of bedding, insulation and/or supplementary heating.
- 4.3.8 At temperatures above 38⁰C trained stock-persons should inspect lactating and gestating sows continually for signs of heat stroke and water cool any animal that is affected.

- 4.3.9 . In intensive housing systems, wide or abrupt temperature fluctuations of greater than 10⁰ C within any 24-hour period should be avoided
- 4.3.10 In completely enclosed houses, the level of air exchanges should provide fresh air for respiration, remove excess heat and waste gases, and minimise the effects of dust and excess moisture for pig and human health. The following are guidelines for safe levels of common pollutants for pigs:

Pollutant	Maximum recommended level
Ammonia	11 ppm
CO ₂	1500 ppm
Carbon monoxide	30 ppm
Hydrogen sulphide	5 ppm
Inhalable particles	0.23 mg/m ³

General Information

- 4.3.11 Operators are encouraged to have systems in place to measure concentrations of ammonia in enclosed houses. Monitoring should focus on areas of least ventilation.
- 4.3.12 Efficient ventilation is particularly important when effluent is held in storage under slatted floors.
- 4.3.13 If the level of irritant or toxic gases within a building is uncomfortable to humans, it is also uncomfortable to pigs and may predispose them to respiratory disease.

4.4 Protection

Minimum Standard

- 4.4.1 All buildings must have sufficient exits to facilitate the quick evacuation of pigs and people in emergencies
- 4.4.2 Appropriate fire-fighting equipment must be available to service all pig houses with key staff trained in its use

Recommended Best Practice

- 4.4.3 Annual inspection of electrical systems should be conducted.
- 4.4.4 When individual quarters are provided for dry sows and gilts the partitions should prevent aggressive behaviour and enable them to see each other.
- 4.4.5 Fire alarms should be situated on all housing units and be regularly checked for function.

- 4.4.6 When planning new buildings, consideration should be given to the use of construction materials with a high fire resistance, and all electrical and fuel installations should be planned and fitted so as to minimise the fire risk.
- 4.4.7 Pig housing should be located and managed to be safe from the effects of fires and floods.
- 4.4.8 Firebreaks should be established around pasture or open-range systems where the risk of fires is high.
- 4.4.9 Pigs should be protected from predators.

4.5 Waste Control

Minimum Standard

<p>4.5.1 Faeces and urine must not be permitted to accumulate to the stage where they pose a threat to the health and welfare of pigs, or disrupt the normal instinct of pigs to have separate dunging and sleeping areas.</p>
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Recommended Best Practice

4.5.2 The frequency of cleaning of pig accommodation will depend on the system of housing used, the type of flooring and stocking density. As a guide, pens with solid floors should be cleaned daily.

4.6 Pigs Kept Outdoors

Minimum Standard

<p>4.6.1 Adequate shelter in winter and shade in summer must be available to all pigs.</p> <p>4.6.2 Sufficient feeder space and watering points must be available for all pigs to gain access to adequate feed and water.</p> <p>4.6.3 Space allowances for shelter and grazing must be provided in accordance with Appendix III.</p>

Recommended Best Practice

- 4.6.4 Huts for farrowing and rearing should be warm, draught free and protected from the elements.
- 4.6.5 Wallows or water sprinklers should be provided in regions with high summer temperatures.
- 4.6.6 Pigs should not be raised on land that is contaminated with toxic plants or organisms that may either cause or transmit disease to such an extent that the health of pigs is affected. Consideration should be given to methods of reducing the build up of such pathogens by the use of herd health programs such as routine

vaccinations, parasite control and regular pasture rotation and spelling.

5.0 Husbandry

5.1 Inspections

Minimum Standard

5.1.1 The frequency and level of inspection must be related to the likelihood of risk to the welfare of pigs, and must be at least once each day by a trained stock-person.

Recommended Best Practice

5.1.2 Under certain circumstances more frequent inspections may be required, for example during hot weather, during outbreaks of disease, where behavioural vices are occurring, when farrowing is expected, or when groups of pigs have been recently mixed.

5.2 Health

Minimum Standards

- 5.2.1 Persons responsible for the care of pigs must be aware of the signs of ill health and must take appropriate action when any such signs are observed in pigs under their care.
- 5.2.2 Weaning must be managed in a way that avoids undue stress on the piglets and minimises the negative impact on their health and welfare.
- 5.2.3 Dead pigs must be removed promptly and, if not required for post-mortem examination, should be disposed of in a hygienic manner such as incineration, composting or deep burial.
- 5.2.4 Sick, weak or injured pigs must be treated as soon as possible, and isolated if necessary.
- 5.2.5 Pigs with incurable sickness, injury or painful deformity must be humanely euthanased as soon as possible.
- 5.2.6 Animals incapable of moving must be killed on location. Moving such animals prior to killing must be minimised.

Recommended Best Practice

- 5.2.7 Pig producers should have in place an effective herd health program to control infectious diseases including parasitism.
- 5.2.8 Vaccinations and other health treatments should be administered to pigs only by persons trained and skilled in such procedures.

- 5.2.9 Records of sick animals, deaths, treatment given and response to treatment should be maintained to assist disease investigations.
- 5.2.10 If the person in charge is not able to identify the causes of ill health and correct them, they should seek advice from those with training and experience in such matters.
- 5.2.11 Persistent tail, ear, flank or tail biting should be investigated with the assistance of expert advisers to identify the possible environment, feed, management or health contributing factors causing the problem.

General Information

- 5.2.12 The recommended methods of emergency humane slaughter for on-farm use are described in Appendix V.
- 5.2.13 Signs of ill health in pigs include separation from other pigs, lethargy, refusal to eat, reduced production or fertility, changes in the consistency of faeces, vomiting, skin discolouration, shivering, sneezing, coughing, panting, lameness, and swellings on the body or joints.

5.3 *Mating, Farrowing and Weaning*

5.3.1 All piglets must receive colostrum or an appropriate substitute within 24 hours of birth.

Recommended Best Practice

- 5.3.2 Sows should be placed in farrowing quarters before the litter is due to allow them to become accustomed to their surroundings.
- 5.3.3 If a sow dies prior to weaning or piglets are receiving inadequate nutrition the piglets should be fostered, hand-reared or humanely killed.

General information

- 5.3.4 Weaning is a stressful time and requires good management to avoid undue stress. The earlier the weaning age, the better the system of management and nutrition needs to be.

5.4 *Boar Management*

Recommended Best Practice

- 5.4.1 In general, adult boars (>9 months old) should be housed individually to prevent fighting
- 5.4.2 The floor of the service area should be well maintained and should not be slippery.

- 5.4.3 Boars stalled for heat detection/mating purposes should be released for exercise and regular matings at least twice per week.
- 5.4.4 All matings should be supervised by a competent stock-person to prevent aggressive behaviours and injury to both boars and sows.

General information

- 5.4.5 Boars may need to be kept in stalls or individual pens to prevent aggression to other boars.
- 5.4.6 Boars that are raised together are less likely to fight one another and may be compatible when kept in pairs or small groups.
- 5.4.7 Housing systems that provide boars with more freedom movement than conventional stalls are encouraged, provided that such systems are consistent with management of boar hygiene and operator health and safety requirements.

5.5 Moving Pigs

- 5.5.1 Pigs should be moved quietly, ideally by using a backing board, by trained stock persons.
- 5.5.2 Design of pig housing and loading facilities should be based on expert advice, to facilitate ease of pig movement and minimise stress on animals.
- 5.5.3 Electric prodders, plastic pipes and dogs (unless they are specifically trained for the purpose) should not be used for moving pigs.

5.6 Elective Husbandry Procedures

Introduction

The procedures described in this section may be carried out where necessary for management reasons and the overall protection of animal welfare. They generally involve a degree of pain to the animal and alternative options that minimise any pain or distress should be used wherever possible.

Minimum Standard

- 5.6.1 Stock-persons must not carry out these procedures unless they are suitably trained and competent or are under the direct supervision of competent persons.
- 5.6.2 Surgical castration of boars older than 21 days must only be performed under local or general anaesthesia under veterinary supervision.

5.6.3 Chemical or surgical procedures that render a boar sterile must only be performed under veterinary supervision.

Recommended Best Practice

- 5.6.4 Strict attention should be paid to:
- suitability of the area in which the procedure is to be performed;
 - the catching and restraining facilities;
 - minimise the duration and amount of restraint, pain and distress;
 - the appropriate selection and maintenance of instruments;
 - maintenance of good hygiene, particularly of hypodermic syringes, scalpels and needles and of the site of injections;
 - provision of after-care for the animals.
- 5.6.5 Restraint used on pigs should be the minimum necessary to complete the procedure.

Castration and taildocking

- 5.6.6 Castration should be avoided. If necessary for marketing purposes, non-surgical methods are preferable.
- 5.6.7 If surgical castration is considered necessary in order for market and consumer requirements to be met, it should be performed by a trained and competent operator.
- 5.6.8 Surgical castration requires use of a sterile sharp implement such as a knife or surgical scalpel, with the animal adequately restrained. Good post-operative drainage of the surgical wound is essential.
- 5.6.9 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 pigs older than 7 days of age are castrated appropriate and effective restraint should be used. Tail docking should be avoided wherever possible.
- 5.6.10 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.
- 5.6.11 If tail docking is required as a preventive measure, it should be carried out before pigs are 7 days of age. At least 2 cm of the tail from its base should be left after docking at this age.
- 5.6.12 Tail docking of pigs over 7 days of age should be performed only in an emergency

Clipping of 'needle' teeth

- 5.6.13 Stock-persons should seek qualified advice to determine if teeth clipping is required. This procedure should not be routinely required.

5.6.14 If aggression between littermates or damage to the sow are problems, this procedure should be carried out within 3 days of birth. Only the tips (top quarter) of the teeth should be clipped using sharp, clean clippers and without cracking the tooth or leaving sharp edges.

Nose ringing

5.6.15 Nose ringing should be avoided if possible. However, this procedure may need to be performed if pigs are kept on pasture to prevent adverse effects to the environment.

5.6.16 A single nose ring should be placed through the cartilage of the top of the snout or the tissues separating the nostrils.

5.6.17 Provision of adequate substrate or pasture for chewing can provide for exploratory or foraging behaviour and deter pigs from rooting up ground.

Identification

5.6.18 Where it is necessary to mark pigs for permanent identification, the ear may be tattooed, tagged, notched or punched, or the body may be tattooed or a micro-chip implanted.

5.6.19 Where ear notching is performed, it should be carried out before the piglets are 7 days of age. Ear notching should be avoided where possible.

Backfat measurement and pregnancy diagnosis

5.6.20 The preferred method is use of ultrasonic or other non-invasive equipment.

Tusk trimming

5.6.21 Tusk trimming of boars is advisable where injury to humans or animals is likely to occur.

5.6.22 Acceptable methods of tusk trimming involve the use of bolt cutters, hack saw or embryotomy wire.

5.6.23 The boar should be appropriately restrained and, if necessary, anaesthetised for restraint. Analgesia is not required as the tusk lacks sensory nerves.

5.6.24 Tusks should be severed cleanly above the level of the gums without causing damage to other tissues.

Health Records

5.6.25 The maintenance of good records is an integral part of a quality assurance system and good farm management. Accurate records should be kept on the case history and treatment of any diseased or injured pigs. Accurate identification of animals is important.

6.0 Preparation for Transport and Slaughter

Pigs should be prepared and transported in accordance with the Australian Model Code of Practice for the Welfare of Animals — Land Transport of Pigs.

7.0 Emergency Euthanasia

Introduction

Previous sections of this Code have drawn attention to those circumstances when, for humane reasons, pigs may need to be humanely destroyed, e.g. injury or disease.

Recommended Best Practice

- 7.1 The method of slaughter should be effective and cause a sudden and painless death for the animal.
- 7.2 The animal should be quietly handled beforehand to ensure it is not unnecessarily distressed or alarmed.
- 7.3 The methods recommended for on-farm use are detailed in Appendix V.

8.0 Quality Assurance System






Recommended Best Practice

- 8.1 It is recommended that commercial pig farms be part of an appropriate industry approved quality assurance program that includes animal welfare.

General information

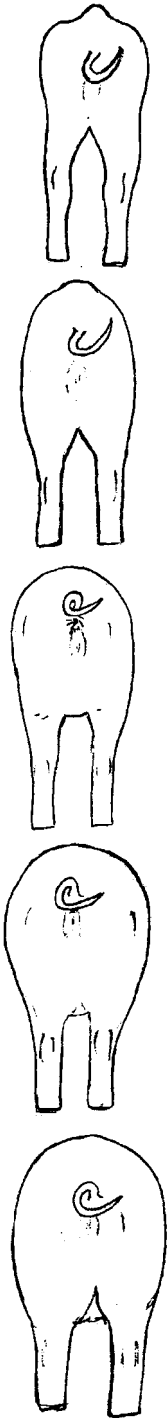
- 8.2 Management and monitoring of animal welfare can be aided by the implementation of an audited on-farm quality assurance system that includes the requirements of this code.
- 8.3 Quality assurance systems provide a record of welfare, health and productivity data as well as documented evidence of critical management procedures, staff training and details of corrective actions for adverse events.

Appendix I-A: Condition Scoring of Sows

Numerical Score	Pelvic Bones, Tail Head	Loin	Vertebrae	Ribs
 <p>1</p>	<p>Pelvic bones very prominent. Deep cavity around the tail head.</p>	<p>Loin very narrow. Sharp edges on transverse spinal process. Flank very hollow.</p>	<p>Prominent and sharp throughout the length of the backbone</p>	<p>Individual ribs very prominent</p>
 <p>2</p>	<p>Pelvic bones obvious but some slight cover. Cavity around tail head.</p>	<p>Loin narrow. Only very slight cover to edge of transverse spinal process. Flank rather hollow.</p>	<p>Prominent</p>	<p>Rib cage less apparent. Difficult to see individual ribs.</p>
 <p>3</p>	<p>Pelvic bones covered.</p>	<p>Edge of transverse spinal processes covered and rounded.</p>	<p>Visible over the shoulder. Some cover further back.</p>	<p>Covered but can be felt.</p>
 <p>4</p>	<p>Pelvic bones only felt with firm pressure. No cavity around tail.</p>	<p>Edge of transverse spinal processes felt only with firm pressure.</p>	<p>Felt only with firm pressure</p>	<p>Rib cage not visible. Very difficult to feel any ribs.</p>
 <p>5</p>	<p>Pelvic bones impossible to feel. Root of tail set deep in surrounding fat.</p>	<p>Impossible to feel bones. Flank full and rounded.</p>	<p>Impossible to feel vertebrae.</p>	<p>Not possible to feel ribs.</p>

Appendix I-B: Condition Scoring of Grower and Finisher Pigs

Numerical Score	Pelvic Bones	Loin	Vertebrae	Ribs
1	Pelvic bones very prominent.	Loin very narrow. Sharp edges on transverse spinal process. Flank very hollow.	Prominent and sharp throughout the length of the backbone	Individual ribs very prominent
2	Pelvic bones obvious but some slight cover.	Loin narrow. Only very slight cover to edge of transverse spinal process. Flank rather hollow.	Prominent	Rib cage less apparent. Difficult to see individual ribs.
3	Pelvic bones covered	Edge of transverse spinal processes covered and rounded.	Visible over the shoulder. Some cover further back.	Covered but can be felt.
4	Pelvic bones only felt with firm pressure.	Edge of transverse spinal processes felt only with firm pressure.	Felt only with firm pressure	Rib cage not visible. Quite difficult to feel any ribs.
5	Pelvic bones impossible to feel.	Impossible to feel bones. Flank full and rounded.	Impossible to feel vertebrae.	Difficult to feel ribs.



The diagrams are a guide only for the welfare assessment of pigs. Care must be taken when assessing body fat and backfat cover as these can be less in pigs that are selected for certain conformation and fat cover in specific locations.

Appendix II – Water Requirements for Pigs

For planning purposes the following consumption estimates are provided for normal ambient temperatures (i.e 10⁰ C – 25⁰ C.).

AVERAGE WATER CONSUMPTION (litres per day)*

Boar or dry sow	12–15
Sow and litter	25–45
Grower pig:	
25 kg	3–5
45 kg	5–7
65 kg	7–9
90 kg	9 – 12

Flow rates will vary depending on the number of drinking points and care should be taken to ensure adequate pump capacity and supply to maintain flow.

Recommended water flow rates and maximum water pressures

Class	Flow Rate (litres/minute)	Maximum pressure (kPa)
Weaners	0.5	85-105
Growers/Finishers	1.0	140-175
Dry sow	1.0	No limit*
Lactating sow	2.0	No limit*

* Care should be made not to have excessive pressure as water wastage can occur.

Appendix III – Recommended Space Requirements.

Adequate welfare standards for space requirements require a consideration of group size, pen size, age, breed, temperature, ventilation, and lighting.

The following minimum space requirements must be provided for housed pigs, based on current knowledge and good practice, are shown in the following tables.

All dimensions and measures given in this appendix are for the internal dimensions of pens, stalls or crates and refer to the clear space provided for pigs inside of rails or partitions.

Minimum standards for Growing Pigs (weaners, growers, finishers)

The allowance should be sufficient for all pigs to lie in a semi-recumbent position and have adequate room for lying and feeding. The minimum available floor area to provide this may be calculated as [m^2 per pig = $0.030 \times \text{bodyweight}^{0.67}$]. This formula applies to indoor pens with fully or partially slatted floors. It excludes areas required for dunging, or open drains, where these are part of the pen design. An additional space provision for dunging is necessary to manage hygiene on solid floors – this may be in the range of 25-30% of the total floor area depending on the management system.

In hot climates, where temperatures at pig level consistently exceed 30 °C on a daily basis, space allowances may need to be increased by up to 60 % to allow pigs to lie stretched out in full lateral recumbency.

Table 1 Minimum space requirement (m^2 per pig) standards for growing pigs (weaners, growers, finishers)

LW(kg)	m^2	LW(kg)	m^2	LW(kg)	m^2	LW(kg)	m^2
1	0.03	31	0.30	61	0.47	91	0.62
2	0.05	32	0.31	62	0.48	92	0.62
3	0.06	33	0.31	63	0.48	93	0.63
4	0.08	34	0.32	64	0.49	94	0.63
5	0.09	35	0.32	65	0.49	95	0.63
6	0.10	36	0.33	66	0.50	96	0.64
7	0.11	37	0.34	67	0.50	97	0.64
8	0.12	38	0.34	68	0.51	98	0.65
9	0.13	39	0.35	69	0.51	99	0.65
10	0.14	40	0.36	70	0.52	100	0.66
11	0.15	41	0.36	71	0.52	101	0.66
12	0.16	42	0.37	72	0.53	102	0.67
13	0.17	43	0.37	73	0.53	103	0.67
14	0.18	44	0.38	74	0.54	104	0.67
15	0.18	45	0.38	75	0.54	105	0.68
16	0.19	46	0.39	76	0.55	106	0.68

17	0.20	47	0.40	77	0.55	107	0.69
18	0.21	48	0.40	78	0.56	108	0.69
19	0.22	49	0.41	79	0.56	109	0.70
20	0.22	50	0.41	80	0.57	110	0.70
21	0.23	51	0.42	81	0.57	111	0.70
22	0.24	52	0.42	82	0.57	112	0.71
23	0.25	53	0.43	83	0.58	113	0.71
24	0.25	54	0.43	84	0.58	114	0.72
25	0.26	55	0.44	85	0.59	115	0.72
26	0.27	56	0.45	86	0.59	116	0.72
27	0.27	57	0.45	87	0.60	117	0.73
28	0.28	58	0.46	88	0.60	118	0.73
29	0.29	59	0.46	89	0.61	119	0.74
30	0.29	60	0.47	90	0.61	120	0.74

Deep litter

Growing pigs housed in deep litter systems require 30 – 50 % more space per pig, depending on design of the system and the number of pigs housed.

Table 2 Minimum Space Requirements for breeding gilts, sows and boars

Class	Space allowance per adult
Gilts mated and unmated in group housing (selected for breeding and >100-150kg LW)	1-1.5 sq m
Sows in group housing	>1.4sq m (with a group size of less than 10 sows greater allowance should be provided in order to minimise the adverse effects of aggression)
Adult sows in individual stalls – all new stalls – stalls installed prior to code	0.6 m x 2.2m Compliant with contemporary code at the time of installation(***)
Boars in individual stalls	0.7 x 2.4 m
Boars in individual pens (living space only)	6.0 sq m
Boars in pens used for both living and mating	10.0 sq m [Shortest side 2 m length]
Sows in farrowing crates – all new crates – crates installed prior to code	0.5m x 2.2 m Compliant with contemporary code at the time of construction(***)
Lactating sows and piglets	Shortest side of a pen should be 1.8 m length.

:farrowing crate and creep area	: 3.2 sq m
:individual farrowing pens	: 5.6 sq m per sow

Sow Stall design:

It is recommended to provide vertical rather than horizontal partition bars in sow stalls.

(*) If stalls or crates installed prior to this code provide less space allowance than the requirement of this code, but did provide the required space allowance of the contemporary code at the time of first installation, they may be used until the end of the following phase out periods:**

- a) 15 years from the making of this code; or
 - b) 25 years from the date of first installation;
- whichever is the longer period.

During the phase out period, any stall or crate that does not comply with this code, should be used for smaller pigs such that the other minimum standards of section 4 can be complied with.

Extensive systems and semi-extensive systems

1. Free Range maximum stocking rates

dry sows 20-25 sows/ha

lactating **sows** with piglets 9-14 sows/ha

2. Minimum space allowances for individual shelter accommodation

1.5 sq m/sow

7.5 sq m/ boar

3. Minimum space requirements for group Housing in shelters or barns

Young sows 1.8 sq m/sow

Sows in group housing 3.5 sq m/sow

Sows with piglets 7 sq m/sow

Boars 10.5 sq m/boar

Appendix IV – Temperature Requirements

Pigs, except the very young, are able to tolerate a wide range of temperatures without detriment to their welfare, provided abrupt temperature changes do not occur.

During very hot weather (35°C or more) adult pigs are very susceptible to heat stress, and steps should be taken to alleviate distress and avoid deaths. Pigs may die if transported in very hot weather.

The ranges of temperature that provide optimum comfort for different classes of pigs are:

Piglets — newborn	30–35 °C
Piglets — 3 weeks of age	24–30 °C (reducing to 26 °C at 5 weeks of age)
Farrowing house	16-22 °C
Weaners	20–30 °C first week (start at 30 °C, reduce by 2 °C per week to 22 °C)
Growers	Aim for 20-24 °C, aim to keep daily fluctuations below 6 °C
Finishers	Aim for 20-24 °C, aim to keep daily fluctuations below 6 °C
Sows and boars	18 – 24 °C aim to keep daily fluctuations below 6 °C

When pigs are too cold they will huddle and change position to conserve heat. They will need more feed to generate heat.

When pigs get too hot they will begin to pant in an effort to cool down and reduce food intake.

Appendix V – Methods for Emergency Humane Destruction of Pigs

Introduction

Euthanasia is defined as a humane death occurring without distress, pain, fear or anxiety.

Key points to consider about euthanasia include:

- human safety — staff must be trained to avoid possible injury to themselves or others
- pig welfare — the method must minimise pain and distress to the pig
- practicality — the method must be affordable, easy to learn and repeatable
- aesthetics — the method should not be unpleasant for the person administering the procedure
- suitability — the method must be suited to the size of the pig
- location — the procedure must be done in a safe, quiet and private location

The euthanasia process can be divided into three stages. First, the pig is physically restrained in a way that minimises pain and distress. This may include placing the animal, if small, into the container in which it will be killed. Larger animals may be restrained using a rope snare or placed in a race to restrict the animal's movements. It is then killed in a quick and painless way in accordance with animal welfare regulations and statutory requirements. Finally, the pig is checked to ensure it is dead.

Methods of euthanasia

There are various methods of euthanasia, described below. The advantages and disadvantages of each of these methods are summarised in the following Table.

Table 6 Advantages and disadvantages of each euthanasia method

Method	Human safety risk	Pig welfare	Skill required	Cost	Class of pig
Carbon dioxide (CO₂)	Low. Use in well ventilated area	Good. Causes respiratory arrest following anaesthesia	Low	Moderate. Initial cost of equipment, CO ₂ supply	Pigs less than 30 kg
Anaesthetic overdose	Low if assistance for restraint is available	Good. Causes respiratory and cardiac arrest following anaesthesia	High. Must be performed by a Veterinarian	Moderate. Anaesthetic solution	All classes of pigs
Gunshot	Moderate to high. Training and gun license required, security of firearm	Good. Correct aim essential	Moderate to high	Moderate, initial cost of firearm and ammunition	Pigs greater than 30 kg
Penetrating captive bolt	Moderate to high. Training required. Security of captive bolt	Good. Correct aim essential	Moderate	Moderate. Initial cost of captive bolt	Pigs greater than 30 kg
Blunt trauma to head	Low	Good if performed on small pigs with rapid force strong enough for instant death	Low. Proper training required	None	Pigs less than 3 weeks of age

Carbon dioxide

Carbon dioxide (CO₂) causes rapid onset of anaesthesia with subsequent death due to respiratory arrest. It is very safe for personnel, and relatively inexpensive. The main disadvantage is that pigs may have transient muscle spasms before death. However, this is a physiological response after the onset of anaesthesia

rather than an indication of stress. The spasms are less intense in stress gene negative pigs than stress gene positive pigs.

Carbon dioxide is heavier than air. Therefore, when constructing a container for pig euthanasia, the outlet valve should be located at the top so the container can be completely filled with carbon dioxide while air is allowed to escape. For small pigs a rubbish bin or similar container with the inlet and outlet valves installed in the lid plus a plastic bag liner, or a cut off inner tube can be used. After checking for complete euthanasia, the bag containing the pigs can be removed.

Anaesthetic overdose

Anaesthetic overdose depresses the central nervous system causing deep anaesthesia leading to respiratory and cardiac arrest. Veterinarians must perform this procedure as it requires intravenous administration. The drugs involved are only licensed to be used by veterinarians as they are dangerous to human beings.

Gunshot

The most efficient and common way to humanely destroy large animals is by a close-range gunshot to the brain. But using a firearm can be dangerous, so the following points must be considered.

Only properly trained and licensed people can legally use firearms.

There may be legal restrictions on discharging a firearm in certain areas. Police permission may be necessary.

A small calibre firearm is most suitable, to reduce the risk of projectiles exiting the head. A .22 or .22 magnum calibre rifle is adequate for most animals if the shot is correctly positioned. The range should be as short as possible, but the barrel should never be touching the animal's head.

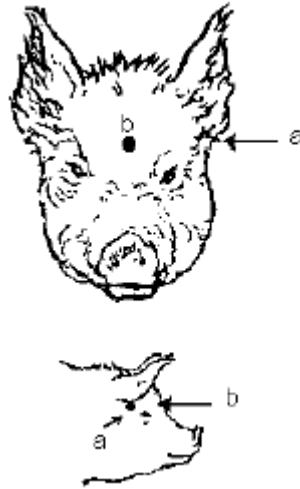
Everyone should be well clear of the area or behind the marksman.

The animal must be still and properly restrained. Shooting at a moving animal is extremely hazardous to the animal and to bystanders. Never fire while the animal is moving its head.

There are two methods: temporal and frontal. For the temporal method, the pig is shot from the side of the head so that the bullet enters the skull at a point midway between the eye and the base of the ear on the same side of the head (position 'a' in Figure 5). The bullet should be directed horizontally into the skull. This method is preferred for adult pigs due to the heavier bone structure of the front of the skull.

When using the frontal method, the firearm should be directed at a point about midway across the forehead and (for adult pigs) about 2 centimetres above the level of the eyes (position 'b' in Figure 5). Aim horizontally into the skull.

Figure X? Temporal and frontal positions



'a' is temporal position, 'b' is front position

Captive-bolt stunners

The captive-bolt stunner is safer than a firearm, since a blank cartridge is used. The operator does not have to be a marksman as the instrument's muzzle is firmly pressed against the animal's skull before firing. It must, however, be assumed that the animal has only been stunned and a follow-up method of ensuring death, such as bleeding out, is required. A captive bolt stunner should NOT be used for the temporal approach outlined above for fire-arms.

Blank cartridges for the captive-bolt stunner are colour-coded according to the amount of charge they contain. The manufacturer's directions should be followed on the most appropriate blank cartridge. Regular maintenance of the captive-bolt stunner is essential for efficient stunning.

Two types of captive-bolt stunner are available. The concussion stunner has a wide mushroom-shaped head which delivers a knockout blow to the skull. The penetrating stunner has a narrow bolt which is driven a short distance into the brain. The penetrating type of captive-bolt stunner is recommended, since it is more reliable at delivering an effective stun. The concussion stunner (non-penetrating) is not recommended.

Stunning by blunt trauma to the head

Blunt trauma to the head using a hammer or other suitable solid heavy object may be used to render unconscious small and easily controlled piglets (up to three weeks old). The blow should be aimed at the centre of the forehead in the position indicated for shooting in Figure X. The unconscious piglet should be immediately bled out to ensure death.

Evidence of instant death

The following signs indicate that the pig is dead:

- The standing animal will collapse.

- The tongue will hang out and be straight and limp.
- When a captive bolt is used the eyes will be wide open with a blank stare.
- The animal will not blink or have an eye reflex in response to touch.
- There will be no evidence of rhythmic breathing or heartbeat.
- There will be no response to a nose pinch.
- There will be no vocalisation.

If any signs of life are still present the same procedure must be repeated or an alternative approach must be used to kill the animal in a rapid and humane manner.

GLOSSARY

Ad libitum allowing pigs to eat an unrestricted amount of feed.

Adult any pig over the age of 9 months.

Ark a weatherproof moveable structure designed for housing sows and/or piglets in outdoor production systems.

Boar an uncastrated male pig over 9 months of age.

Body condition score a five stage scoring system used to classify the condition of pigs, based on the amount of fat and/or muscle covering they have.

Crate crates are used as independent pieces of equipment and are purpose designed for confining pigs for a number of husbandry functions, including weighing, handling for veterinary interventions, farrowing and assisting with other reproductive processes.

Creep area separate area within a farrowing facility in which piglets are protected from crushing or overlying by the sow, and which is usually heated to provide a temperature that is more suitable for maintaining the welfare of piglets, at the same time as maintaining the comfort of the sow.

Creep meal a highly palatable, nutritious feed fed to piglets while they are suckling the sow.

Colostrum milk secreted by the sow for the first few days after farrowing, characterised by high protein and antibody content.

Deep litter system a type of group housing system in which pigs are kept on a deep layer of bedding material, usually straw or sawdust.

Dry feeding providing feed in a 'dry' form, i.e. separate from any additional water.

Dry sow a female pig that has been mated and has not yet farrowed.

Dry sow stall an enclosure in which gilts and sows are kept individually. Stalls are normally joined together in rows and may be used for total confinement or allow the pig free choice of access. In addition the period of confinement may vary from part of the pregnancy to the entire pregnancy.

Farrowing giving birth to piglets.

Farrowing crate an enclosure closely related to the sow's body size, in which sows are kept individually during and after farrowing.

Farrowing pen an enclosure for confining individual sows and their litters during and after farrowing. Such pens contain a creep area and a farrowing crate or other structure for confinement of the sow.

Feeder equipment from which feed is dispensed.

Feeding station an enclosure used in conjunction with group housing systems, which animals enter into one at a time to be individually fed.

Finisher pigs that are generally above 70 kg liveweight, until they are sold or retained for breeding. The same meaning applies for pigs referred to as “Finishing”.

Foster a management practice whereby a piglet is moved soon after farrowing, so that it is fed by a sow that is not its mother.

Gilt a young female pig, selected for reproductive purposes, before she has been mated.

Grower pigs generally with liveweights between 30 and 70 kg. The same meaning can apply for pigs referred to as “Growing”.

Growing pigs weaners, growers and finishers.

Husbandry care and management practices in pig keeping.

Hut see definition for “ark”.

Lactating sow a sow that has given birth, and is producing milk to feed her piglets.

Lux an international measure of light intensity (not to be confused with watts).

Mated gilt a young female pig that has been mated, but has not had a first litter.

p2 a fat depth measurement which is taken at the level of the last rib, 6.5cm from the mid-line of the back (lateral to the centre of the vertebral column).

Pathogen a disease-causing agent of an infectious nature, such as a bacterium or virus.

Pecking order the social hierarchical order whereby individuals establish their dominance position within a group of pigs.

Pen an enclosure for confining pigs in which they can turn around which may be used for housing pigs in groups, housing boars individually, management purposes such as mating or farrowing, or for confining pigs individually.

Persistent bullying enduring aggression of a pig by one or more other pigs, leading the stock handler to consider that the welfare of a pig is being compromised.

Piglet a pig up to the time it is weaned from the sow.

Proprietary liquid supplement a liquid product purchased from a commercial company to add nutrients to a pig’s diet.

Reproductive cycle the period from mating to the following mating, which in the context of this code is defined as 150 days.

Rooting a behaviour of pigs whereby they use their nose to dig in the ground or in any available material.

Routine procedures husbandry procedures routinely undertaken in commercial pig production.

Salt Sodium chloride (NaCl).

Sow an adult female pig, which has had one or more litters.

Stall an enclosure, closely related to the pig’s body size, in which gilts, sows and boars are kept individually. Stalls are normally joined together in rows and may be used for total confinement or allow the pig free choice of access.

Stockhandler a person who undertakes the immediate day-to-day husbandry tasks associated with looking after pigs.

Stockhandling putting into practice the skills, knowledge, experience, attributes and empathy necessary to manage stock.

Suckling piglet a piglet between birth and weaning i.e. an unweaned pig.

Tethering a method of restraining pigs whereby a neck or girth collar is attached to a short length of chain, which is in turn fixed to the floor or the front of a pen.

Thoracic sticking severing the major blood vessels around the heart by inserting a knife into the thoracic cavity in order to exsanguinate (drain the blood from) an animal.

Weaner a pig after it has been weaned from the sow up until approximately 30kg in liveweight.

Weaning the act of permanently separating piglets from the sow.

Wet feeding providing feed in a slurry form, where water and feed are combined.