DEPARTMENT OF
PRIMARY INDUSTRIES



Code of Accepted Farming Practice for the Welfare of Pigs

(Revision 2)

Victoria
The Place To Be

Code of Accepted Farming Practice for the Welfare of Pigs (Revision 2)
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CONTENTS

PREFACE

The Prevention of Cruelty to Animals Act 1986 came into force on 20 May 1986 and is administered by the Department of Primary Industries. The Act has the purpose of protecting animals, encouraging the considerate treatment of animals and improving the level of community awareness about the prevention of cruelty to animals. It establishes fundamental obligations relating to the care of animals in general terms. Details of these obligations are found in Codes of Practice made under the provisions of the Act. These Codes set out minimum standards and recommendations relating to important aspects of the care of animals. It is recommended that all those who care for animals become familiar with the relevant Codes.

This Code incorporates the Australian '*Model Code of Practice for the Welfare of Animals — Pigs* 3rd Edition' that was prepared by the national Animal Welfare Working Group (AWWG) and endorsed by the Primary Industries Ministerial Council (PIMC) on 20 April 2007. Membership of AWWG comprises representatives from each of the State Departments with responsibility for agriculture, CSIRO, Animal Health Australia, and the Department of Agriculture, Fisheries and Forestry - Australia. Extensive consultation has taken place with community, industry and animal welfare organisations in the development of the Code. The Victorian Code was issued by a notice published in the Government Gazette on 6 March 2008.

1 INTRODUCTION

1.1 The *Code of Accepted Farming Practice for the Welfare of Pigs* (The Code) is intended as a guide for all people responsible for the welfare of pigs under intensive, deep litter and outdoor systems. It recognises that the basic requirement for the welfare of pigs is a husbandry system, managed by trained and skilled stock-people.

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 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 evolve. Whilst it outlines important aspects to be taken into account in ensuring the welfare of pigs, the need for experience and common sense in the husbandry of animals is also emphasised.

1.3 The 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 practice' and 'Guidelines' is advisory only.

1.4 One measure of good welfare in farmed pigs is that they are coping with the environment they are placed in and a farm can demonstrate growth, reproductive performance, disease levels, injuries and death rates within industry standards.

2 COMPETENCE OF THE STOCK-PERSON

Standards

2.1 Persons responsible for the day-to-day needs of pigs must ensure animals under their control are cared for in accordance with the Standards in this Code.

2.2 Pigs must be cared for by personnel who are skilled in pig husbandry and are competent to maintain the health and welfare of the animals in accordance with the Standards listed in this Code, or are under the direct supervision of such personnel. Such competency must be able to be demonstrated within three years of endorsement of this Code.

Recommended practice

2.3 Personnel should be appropriately instructed on how their actions may affect a pig's welfare.

2.4 Personnel should undergo formal training and/or be trained on-the-job under the supervision of experienced supervisors within the first six months of employment. Thereafter training should be conducted on a regular basis.

Guideline

2.5 The suggested level of skill from training and competency for supervisors is at Certificate III in Agriculture - Pig Production, or an equivalent qualification.

3 FOOD AND WATER

3.1 FOOD

Standards

3.1.1 Pigs must be provided with daily access to feed that maintains their health and meets their physiological requirements.

3.1.2 A stock-person responsible for pigs must take remedial action if persistent bullying is leading to deprivation from food.

3.1.3 Automatic feeders must be checked daily.

3.1.4 Weaners must be provided with access to feed at least twice daily.

3.1.5 If body condition score of a pig falls below 2 (on the scale of 1–5, see Appendix 1), action must be taken to improve body condition. If remedial action fails to recover them to a score of above 2 they must be culled.

Recommended practice

3.1.6 Automated feeding systems should allow animals access to feed in a manner that minimises intimidation, bullying and aggression from other pigs.

3.1.7 Food provided should be fresh, palatable, and free of known gross contaminants, physical or toxic substances and micro-organisms at levels that are known to cause harm.

3.1.8 There should be contingencies to provide an alternative means of obtaining and delivering feed, in case of supply failure or delays in delivery.

3.1.9 Boars and pregnant sows should be given some bulky or high fibre feed to satisfy appetite. The feed provided for dry sows needs to satisfy appetite without causing the sow to become over-fat.

Guidelines

3.1.10 Condition scoring can only be used 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 1.

- Condition score of grower and finisher animals should be 3 or above.
- Condition scoring of breeding sows at farrowing should be 3–3.5.
- Condition score of breeding sows at weaning should be 2.5 or more.

3.1.11 To assess nutritional adequacy, weight for age along with an assessment of the general state of health are more reliable indicators, particularly in growing pigs.

3.2 WATER

Standards

3.2.1 Drinking water or another wholesome liquid must be easily available to pigs at all times to meet their physiological water needs.

3.2.2 Automatic watering systems must be checked daily.

3.2.3 A stock-person responsible for pigs must take remedial action if persistent bullying is restricting access to water.

Recommended practice

3.2.4 Medicated water should only be used on competent professional advice, as there is a risk that overuse or mixing of medications, or the medication itself, may cause toxic injury to the pigs.

3.2.5 Water provided should be palatable[1], and at a temperature that does not inhibit drinking.

3.2.6 Drinker allocation per pen or group, drinker design, position and flow rates should be such that water requirements of different classes of pig can be met.

Guidelines

3.2.7 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 suitably qualified adviser.

3.2.8 Where wholesome liquid products are to be used as both a food and water source (e.g. whey), advice should be obtained from a qualified adviser on the suitability of the product for that purpose.

1 Reference: ANZECC & ARMCANZ (October 2000). *Australian and New Zealand Guidelines for Fresh and Marine Water Quality.* Paper no. 4 - Vol.3. ISBN 09578245 0 5

3.2.9 The daily consumption of water by a pig will vary according to environmental temperature, feeding regime, diet ingredients and live-weight. Providing drinking water at a temperature below 20°C can assist in ensuring adequate intake during hot conditions, where this is possible. Pigs will adapt to drinking warm water in hot climates. The table in Appendix 2 shows the typical daily water requirements for various classes of pig.

3.2.10 Disinfection of drinking water can prevent introduction of diseases. This should be undertaken only according to the instructions of a qualified adviser.

3.2.11 Some pigs may constantly bully others away from a drinker point and it is suggested that more drinker spaces be provided where this occurs.

4 ACCOMMODATION

Construction or redesign of housing should be based on expert advice. Housing should meet animal welfare, environmental, and operator health and safety requirements. Pig housing and facilities should be cross-checked for compliance with the Standards of this Code.

4.1 SYSTEMS

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

- Indoor (including single and group housing on solid or slatted floors);
- Deep litter (groups on deep litter in shelters or sheds);
- Outdoor (free range in paddocks with shelter such as arks or huts).

Standards

4.1.1 Accommodation for pigs must be designed, constructed and managed in such a way that it protects pigs from adverse weather, injuries or other harm.

4.1.2 Accommodation for pigs must provide at least the minimum space requirements identified as Standards in Appendix 3.

4.1.3 Sows and boars accommodated individually in stalls must be able to stand, get up and lie down without being obstructed by the bars and fittings of the stall, to lie with limbs extended, to stretch and to be able to freely undertake such movements.

Specifically, in the case of sows and boars:

(a) They must be able to stand up at rest in a stall without simultaneously touching both sides of the stall;

(b) When they lie down in the stall, their snout and hindquarters must not simultaneously be touching the ends of the stall;

(c) If the stall has bars along the top these must not touch their backs when standing at rest or when they have their heads down feeding;

(d) The placement of drinkers and/or feed/water troughs in the stall must be easily accessible to them, but must not prevent ability to stand, stretch and lie down;

(e) When lying down, any contact with their neighbours in stalls on either side must not result in injury.

4.1.4 Stalls and farrowing crates must be designed and constructed to minimise aggression between pigs and overlying of piglets by sows.

4.1.5 From 10 years after endorsement of the Code a sow must not be confined in a stall for more than six weeks of any gestation period. An exception is for individual sows that are under veterinary advice or special care by a competent stock-person.

4.1.6 Facilities for lactating sows must allow them to:

(a) Stand and lie down without obstruction by the bars or fittings of the crate;

(b) Give birth to piglets without obstruction, and minimise losses of piglets from crushing, trapping or injuries;

(c) Suckle piglets so that both sides of the udder are accessible;

(d) Access feed and water without obstruction.

4.1.7 Sows confined in farrowing crates must not be confined in these for more than six weeks in any one reproductive cycle, except in an emergency, e.g. where a sow is required to foster a second litter after her own piglets are weaned. In such an exceptional situation the stock-person must provide additional care to the sow.

4.1.8 Where boars are kept constantly in stalls they must be released for use for mating or exercised at least twice per week.

4.1.9 Tethers must not be used to restrain pigs.

4.1.10 Boars run in groups must be monitored daily and managed to ensure that subordinate boars are not seriously injured or subjected to persistent aggression by other boars.

Recommended practice

4.1.11 Pigs grouped in pens require sufficient space for each to sleep, defecate and access feed and water.

4.1.12 In combination stall-group systems for dry sows or gilts, bullying and deprivation of food can be a problem and this should be monitored and managed by the stock-person.

4.1.13 Where individual quarters are provided for dry sows and gilts the partitions should prevent injury from aggressive behaviour while still enabling them to see each other. Bars of stall partitions should be vertical rather than horizontal.

Guidelines

4.1.14 Aggression problems can occur in group housing accommodation. This may be managed by adopting some or all of the following measures under the advice of qualified advisers. Careful monitoring is required to ensure that aggression is not made worse or merely postponed.

- Culling of over-aggressive lines of pigs;
- Drafting out of subordinate sows;
- Grading for size evenness;
- Keeping groups stable;
- Providing environmental enrichment (e.g. provision of straw or novel objects to manipulate);
- Provision of escape areas for bullied sows (e.g. partitions, feeding stalls);
- Provision of more 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 and design, and group numbers;
- Minimising the mixing of unfamiliar pigs;
- Castration or immuno-castration of males;
- Adoption of alternative accommodation systems (e.g. outdoor management systems, family pen systems);
- Providing free access to feed provided that over-fatness can be controlled or free access to feed at the time of first mixing.

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:

- Introducing new or re-entering sows in groups of five or more to larger groups of sows rather than individually;
- Grouping after dark;
- Using masking odours on all pigs in the group.

4.1.15 Floors should be installed and maintained in a way that minimises slipping and the risk of injury and allows pigs to stand normally.

4.1.16 Solid surfaces that pigs have access to should be made of materials that can be readily cleaned and disinfected.

4.1.17 In deep litter systems litter should be replaced or refreshed at intervals that ensure good hygiene, provide for comfort needs and avoid compromise to welfare from scalding and lameness.

4.1.18 The provision of straw or other suitable materials to permit foraging behaviour and provide physical and thermal comfort when lying down is encouraged, provided that this is compatible with drainage, hygiene requirements and climatic conditions.

4.1.19 Boars can be kept in compatible groups to permit regular exercise. They can also be kept with groups of gilts or sows provided that persistent bullying or excessive unwanted mounting behaviours do not occur.

4.2 EQUIPMENT

Standards

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

4.2.2 Equipment to which pigs have access must be designed and maintained to minimise risk of injury to the pigs.

4.2.3 A risk management system must be in place in case of breakdown of mechanical equipment or delay in delivery for alternative ways of providing feed and water, and to provide environmental needs.

4.2.4 Sheds with automatically controlled forced-ventilation environmental systems (i.e. shutters or fans controlled by temperature sensors) must have fail-safe backups that enable sheds to be ventilated if power failure is likely to threaten the health and welfare of pigs.

4.2.5 Naturally ventilated sheds that rely on automatic equipment must be inspected at least twice daily or have a fail-safe back-up system and/or an alarm system that will warn of power or mechanical failure.

4.2.6 Electrical installations at mains voltage must be inaccessible to pigs and properly earthed.

Recommended practice

4.2.7 Staff skilled in the correct operation of systems (including back-up systems) that have a high degree of control over the environment, including automated or mechanical feed delivery systems, should be available to operate such systems.

4.3 ENVIRONMENT

Standards

4.3.1 Stock-persons must use lighting that enables inspection of all pigs.

4.3.2 Ventilation must prevent accumulation of harmful concentrations of gases.

4.3.3 Action must be taken to detect and cool heat-distressed pigs.

Recommended practice

4.3.4 Equipment to routinely measure and record maximum and minimum air temperatures at pig level should be available in all sheds.

4.3.5 Suckling piglets that are under three weeks of age and weaners should be provided with bedding, insulation or supplementary heating that protects against cold. Optimum comfort ranges are outlined in Appendix 4.

4.3.6 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 loaded for transportation in very hot conditions.

4.3.7 At temperatures above 38°C stock-persons should inspect lactating and gestating sows regularly for signs of heat stroke and cool any animal that is affected, e.g. water application followed by increasing airflow, provision of ice blocks as a lick and, subject to environmental requirements, provision of access to wallows or mist sprays for outdoor pigs.

4.3.8 In indoor systems, abrupt temperature fluctuations of greater than 10°C during the day should initiate monitoring for adverse effects on pigs that may require manipulation of heating or water cooling and air movement, to assist pigs to cope or be at their optimum temperature range.

Guidelines

4.3.9 Natural or artificial light of at least 20 lux is suggested to be made available at pig level in all buildings for a minimum of nine hours daily.

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.

Table 1. Guidelines for safe levels of common pollutants for pigs

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

4.3.11 Operators are encouraged to have systems in place to measure concentrations of ammonia in enclosed houses. Monitoring is to be focused 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 Guidelines on managing temperature requirements for pigs are provided in Appendix 4 of this Code.

4.4 PROTECTION

Standards

4.4.1 All buildings must have fire prevention measures in place in accordance with the requirements of the controlling authority.

4.4.2 Approved fire-fighting equipment must be available to service all pig accommodation with staff trained in its use. In large shelters that are difficult to service with fire equipment and the pigs are in one space, there must be gates to open to allow pigs to escape.

4.4.3 Preventative measures must be implemented for protection of pigs from predators.

Recommended practice

4.4.4 Annual inspection of electrical systems by a qualified person should be conducted.

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 risk of fire.

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 for open-range systems and pig sheds where the risk of fire is high.

Guideline

4.4.9 There should be a sufficient number of exits to facilitate rapid evacuation of personnel and orderly evacuation of pigs where this is practicable, safe for personnel and time permits.

4.5 WASTE CONTROL

Standard

4.5.1 Faeces and urine must not be permitted to accumulate to the stage where there is no clean area for pigs to lie down.

4.6 PIGS KEPT OUTDOORS

Standards

4.6.1 Access to shelters in cold weather and shade in hot weather must be provided to all outdoor pigs.

4.6.2 Feed and watering points must be provided so that all pigs can gain access and obtain their daily physiological requirements.

4.6.3 Pigs must not be raised on land that is contaminated with toxins, chemical residues, toxic plants or disease-causing organisms at levels that are known to cause harm.

Recommended practice

4.6.4 Space allowances for shelters and grazing should be provided in accordance with Appendix 3.

4.6.5 Huts for farrowing and rearing should provide protection for pigs from the elements and provide an environment where pigs are able to manage their thermal comfort.

4.6.6 In regions with high summer temperatures, risk mitigation measures should be put in place to reduce the risk of heat stress. This may include the provision of shade, ventilation and, subject to environmental considerations, wallows and water sprinklers.

4.6.7 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.

Guideline

4.6.8 Commercial breeds of pigs developed for intensive systems may not be suitable for all outdoor conditions. Consideration might be made to use breeds that are more suited, such as Large Black, Tamworth, Wessex Saddleback and Berkshire breeds or hybrids of such breeds.

5 HUSBANDRY

5.1 INSPECTIONS

Standard

5.1.1 Pigs must be inspected at least once each day by a competent stock-person.

Recommended practice

5.1.2 Personnel should be provided with adequate time for the inspection of pigs and the checking of equipment.

5.1.3 Personnel in charge of pigs should be able to recognise early signs of distress or disease so that prompt action is taken or advice sought.

5.1.4 More frequent and thorough inspections should be undertaken when there is an increased risk to welfare, for example during hot weather, outbreaks of disease, where behavioural vices are occurring, when farrowing is expected, or when groups of pigs have been recently mixed.

5.1.5 When pigs are housed in large groups where it is difficult to visualise all individuals, inspection should be undertaken whilst moving among the livestock.

5.2 HEALTH

Standards

5.2.1 Persons responsible for the care of pigs must be competent to recognise the signs of ill health in pigs, including behavioural anomalies, and must take appropriate action when any such signs are observed in pigs under their care.

5.2.2 Weaning must be managed to minimise any negative impact on the health and welfare of the sow and piglets.

5.2.3 Dead pigs must be removed as soon as practicable.

5.2.4 Sick, weak or injured pigs must be treated and if necessary isolated.

5.2.5 Pigs with incurable sickness, injury or painful deformity must be humanely euthanased.

5.2.6 Animals incapable of moving must be euthanased on location.

5.2.7 Pig producers must have a herd health program in place to manage the risk of disease.

5.2.8 If the person in charge is not able to identify the causes of ill health and correct them, they must seek advice from those with training and experience in such matters.

5.2.9 Vaccinations and other health treatments must be administered to pigs only by persons competent in such procedures or by persons under the direct supervision of a person experienced in conducting the procedure.

Recommended practice

5.2.10 Records of sick animals, deaths, treatment given and response to treatment should be maintained to assist disease investigations.

5.2.11 Behavioural vices such as persistent ear, flank or tail biting should be investigated with the assistance of a suitably qualified adviser to identify the possible environment, feed, management or health factors causing the problem.

Guidelines

5.2.12 The recommended methods of emergency humane slaughter for on-farm use are described in Appendix 5.

5.2.13 Signs of ill health in pigs may 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, swellings on the body or joints and abnormal behaviour.

5.2.14 Methods of carcase disposal can include incineration, composting or deep burial, subject to the approval of the relevant authorities.

5.3 FARROWING AND WEANING

Standards

5.3.1 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.

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

Recommended practice

5.3.3 Sows should be placed in farrowing quarters before the litter is due, to allow them to become accustomed to their surroundings.

Guideline

5.3.4 For weaning of pigs under three weeks of age, management and nutrition needs to be of very high standard to prevent piglet mortality and ill-thrift.

5.4 BOAR MANAGEMENT

Recommended practice

5.4.1 Aggressive adult boars should be housed individually to prevent injury from fighting or be kept in compatible groups.

5.4.2 The floor of the service area should be well maintained and not slippery.

5.4.3 Matings should be conducted under the supervision of a competent stock-person to prevent aggressive behaviours and injury to boars, sows or gilts.

General information

5.4.4 Boars may need to be kept in stalls or individual pens to prevent persistent aggression to other boars.

5.4.5 Boars that are raised together are less likely to fight one another and may be compatible in pairs or small groups.

5.4.6 Housing systems that provide boars with more freedom of movement than conventional stalls are encouraged for use, provided that such systems are consistent with management of boar hygiene and operator health and safety requirements.

5.5 MOVING PIGS

Standard

5.5.1 Dogs, electric prodders and hitting with solid objects must not be used to move pigs.

Recommended practice

5.5.2 Pigs should be moved quietly, ideally by using a backing board or other non-injurious objects, by skilled stock-persons.

5.5.3 Design of pig housing and loading facilities should be based on expert advice, to facilitate ease of pig movement and minimise stress on animals.

5.6 ELECTIVE HUSBANDRY PROCEDURES

Introduction

The procedures described in this section may be carried out where necessary. Alternative options that minimise or alleviate pain from elective husbandry procedures, or the avoidance of their use, should be adopted where possible.

Standards

5.6.1 Stock-persons must not carry out elective husbandry procedures unless they are competent to undertake them or are under the direct supervision of a person experienced in conducting the procedure in accordance with this Code.

5.6.2 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.

Recommended practice

5.6.3 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;
- 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.

5.6.4 Restraint used on pigs should be the minimum necessary to safely and quickly complete the procedure.

Castration

5.6.5 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.

5.6.6 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.

5.6.7 It is recommended that piglets be castrated after two days of age, after they have established their suckling order, and before seven days of age. When pigs 8–21 days of age are castrated, appropriate and effective restraint is necessary.

Tail docking

5.6.8 Tail docking should be avoided wherever possible.

5.6.9 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 enrichment with straw or other materials that can be manipulated.

5.6.10 Where tail docking is practiced as a preventative measure, it should be carried out before pigs are seven days of age.

Clipping of 'needle' teeth

5.6.11 Qualified advice should be sought to determine if teeth-clipping is necessary. This procedure should not be routinely required.

5.6.12 If aggression between littermates or damage to the sow are a problem, this procedure should be carried out within three days of birth. It should only be done where unacceptable injury is occurring to littermates and the sow's udder.

5.6.13 Only the tips (no more than a quarter) of the teeth should be removed.

Nose ringing

5.6.14 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.

5.6.15 Nose rings should be placed through the cartilage of the top of the snout or the tissues separating the nostrils.

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

Identification

5.6.17 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.

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

Back-fat measurement and pregnancy diagnosis

5.6.19 The recommended method for pregnancy testing and back-fat measurement is with the use of ultrasonic or other non-invasive equipment.

Tusk trimming

5.6.20 Tusk trimming of boars is necessary where injury to humans or animals is likely to occur.

5.6.21 Tusk trimming should be conducted using embryotomy wire.

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

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

6 PREPARATION FOR TRANSPORT AND SLAUGHTER

Pigs should be prepared and transported in accordance with the relevant State legislation and Codes of Practice relating to pig transport.

7 EMERGENCY EUTHANASIA

Introduction

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

Standards	
7.1	The method of euthanasia must cause a sudden unconsciousness with death occurring when unconscious.
7.2	A competent person who is suitably trained is to perform the euthanasia.

Recommended practice

7.3 The animal should be quietly handled beforehand to ensure it is not unnecessarily distressed or alarmed.

7.4 The methods suitable for on-farm euthanasia are detailed in Appendix 5.

8 QUALITY ASSURANCE SYSTEMS AND RECORD KEEPING

Recommended practice

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

8.2 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 essential.

Guidelines

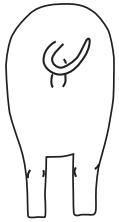
8.3 Management and monitoring of animal welfare can be aided by the implementation of an audited on-farm quality assurance system that includes the Standards of this Code.

8.4 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 1: CONDITION SCORING OF PIGS

Table 2. Guidelines for body condition score of pigs

Numerical Score	Pelvic Bones, Tail Head	Loin	Vertebrae	Ribs	
1	Pelvic bones very prominent. Deep cavity around the tail head.	Loin very narrow. Sharp edges on transverse spinal processes. Flank very hollow.	Prominent and sharp throughout the length of the backbone.	Individual ribs very prominent.	
2	Pelvic bones obvious but some slight cover. Cavity around tail head.	Loin narrow. Only very slight cover to edge of transverse spinal processes. 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. No cavity around tail.	Edge of transverse spinal processes felt only with firm pressure.	Felt only with firm pressure.	Rib cage not visible. Very difficult to feel any ribs.	
5	Pelvic bones impossible to feel. Root of tail set deep in surrounding fat.	Impossible to feel bones. Flank full and rounded.	Impossible to feel vertebrae.	Not possible to feel ribs.	

Care should be taken when assessing body fat and back-fat cover as these can be less in pigs that are selected for certain conformation and fat cover in specific locations.

APPENDIX 2: WATER REQUIREMENTS FOR PIGS

For planning purposes the following consumption estimates are provided for normal ambient temperatures (i.e. 10°C–25°C).

Table 3. 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.

Table 4. 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*
Lactacting sow	2.0	No limit*

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

APPENDIX 3: SPACE ALLOWANCES FOR PIGS

Introduction

Adequate space allowances require a consideration of group size, pen size, age, breed, temperature, ventilation, and lighting.

The following tables of Standards for space allowances that must be provided for pigs housed indoors are based on current scientific knowledge and good practice. All dimensions and measures refer to the clear space provided for pigs inside of rails or partitions.

Pen fixtures such as feeders and waterers can be included in this space for stalls and crates as long as they do not impede movement or cause injury.

The space allowances Standards for pigs housed indoors outlined below are to be considered binding on all facilities from five years after endorsement of this Code, except where otherwise specifically stated.

1. Standards for Growing Pigs (weaners, growers, finishers)

The minimum available floor area for weaners, growers and finishers is calculated as m^2 per pig = 0.030 x bodyweight $^{0.67}$ (see footnote reference[2]). This formula applies to indoor pens of all flooring types. Where there is a range of weights in a group, the minimum is based on the average weight of pigs in the group.

Table 5. Minimum space requirement (m^2 per pig) for weaners, growers, and 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**

2 Spoolder, HAM, Edwards, SA, Corning, S (2000). *Livestock Production Science* 64: 167-173.

LW(kg)*	m^2	LW(kg)	m^2	LW(kg)	m^2	LW(kg)	m^2
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**

*LW = live-weight

Recommended practice

Pigs housed for more than one to two weeks in deep litter systems should be provided with at least 30% more space per pig than the Standards listed for group housing with other flooring and waste management systems. This is required to assist with litter management.

2. Standards for breeding gilts, sows and boars housed indoors

Table 6. Minimum space requirements for adult pigs

Class	**Minimum space allowance per adult**
Gilts in group housing (mated or selected for breeding and >100 kg LW)	1 m^2
Sows in group housing	1.4 m^2
Adult pigs in individual stalls • All new installations Sows Boars • All stalls, including those installed prior to endorsement of this Code	 0.6 m x 2.2 m 0.7 m x 2.4 m Must provide the outcome based Standards of Section 4.
Boars in individual pens (living space only)	6.0 m^2
Sows in farrowing crates • New farrowing crate installations: Crate dimensions Farrowing crate and creep area	 0.5 m x 2 m 3.2 m^2 • The minimum length must be 2 metres. This is the internal measurement, inclusive of feed and water facilities and a rear anti-crush rail placed where required. • The minimum width of 500 mm is to be taken at not more than 450 mm above the floor level. • Where crates installed prior to this Code are smaller than this, they must only be used for smaller sows to achieve the Standards of Section 4.
• All farrowing crates, including those installed prior to endorsement of this Code	• Must provide the outcome based Standards of Section 4.
Farrowing pen	5.6 m^2 per sow

Recommended practice
Sows, when housed in group pens with a group size of less than 10 sows, may need a greater space allowance than the stated minimum if persistent bullying and aggression occurs.

3. Recommended practice for outdoor pigs

3.1 Space allowances for outdoor systems

Table 7. Maximum stocking rate recommendations in paddocks

Dry sows	20–25 sows/ha
Lactating sows with piglets	9–14 sows/ha

Feeding facilities are included in this allowance.

Guidelines
The following information is common practice:
Sows kept in groups 300–400 m^2 per sow
Sows kept in individual paddocks 400–500 m^2 per sow

3.2 Space allowances for shelter accommodation

Table 8. Minimum space allowance recommendation for shelter accommodation

Dry sows in groups	1.2–1.5 m^2/sow
Lactating sows with piglets	4–6 m^2/sow
Boars	2 m^2/boar

APPENDIX 4: TEMPERATURE RECOMMENDATIONS

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.

Observation of a pig's behaviour by a competent stock-person is the most reliable method to assess thermal comfort.

When pigs are too cold they will huddle and change position to conserve heat. They will increase their feed intake.

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

There are a number of ways to manage thermal comfort for pigs, e.g. cooling from increased air movement, water sprays, insulation, bedding and supplementary heating.

Table 9. Ranges of temperature that provide optimum comfort for different classes of pigs at pig level

Piglets — newborn	27–35°C
Piglets — 3 weeks of age	24–30°C
Farrowing house	16–22°C
Weaners	20–30°C in first week
Growers	15–30°C
Finishers	15–30°C
Sows and boars	15–30°C

APPENDIX V:
METHODS FOR EMERGENCY EUTHANASIA OF PIGS

Introduction

Euthanasia is defined as causing a sudden unconsciousness with death occurring when unconscious and 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 and other pigs;
- Practicality — the method must be affordable, easy to learn and repeatable;
- 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. 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 10. Advantages and disadvantages of each euthanasia method

Method	Human safety risk	Pig welfare	Skill required	Cost	Class of pig
Carbon dioxide (CO_2)	Low. Use in well-ventilated area	Good. Can cause aversive reactions. Causes respiratory arrest following anaesthesia	Low	Moderate. Initial cost of equipment, CO_2 supply	Pigs less than 30 kg

Method	Human safety risk	Pig welfare	Skill required	Cost	Class of pig
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 licence required, security of firearm	Good. Correct aim essential	Moderate to high	Moderate, initial cost of firearm and ammunition	Pigs greater than 15 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 15 kg

Guidelines

(i) Carbon dioxide

Carbon dioxide (CO_2) can cause rapid onset of anaesthesia with subsequent death due to respiratory arrest if a concentration of over 80% can be maintained. It is very safe for personnel, and relatively inexpensive.

The main disadvantage is that pigs can become distressed if the gas is not correctly applied. They 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 that the pigs are dead, the bag containing them can be removed.

(ii) 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 or intracardiac administration. The drugs involved can only be used by veterinarians.

(iii) Gunshot

The most efficient and common way to humanely destroy pigs is by a close-range gunshot to the brain.

- 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 0.22 calibre magnum rifle is adequate for most pigs if the shot is correctly positioned. A 0.22 calibre rifle should only be used on young pigs. The range should be less than 5 m and the muzzle must not be placed against the animal's head.
- 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 1). 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.

For the frontal method, the firearm should be directed at a point midway across the forehead and (particularly for adult pigs) about 2 cm above the level of the eyes (position 'b' in Figure 1). Aim horizontally into the skull.

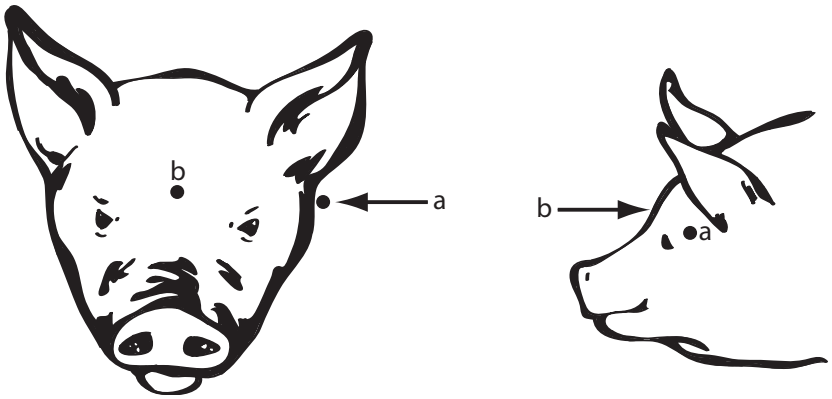


Figure 1. Temporal (a) and frontal (b) positions

(iv) Captive-bolt stunners

The captive-bolt stunner is safer than a firearm, since a blank cartridge is used. The 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. This requires the severing of blood vessels to induce effective bleeding. It is often necessary to follow up a neck cut with a thoracic stick to sever the larger blood vessels at their origin near the heart, because the blood loss from the neck cut alone is not sufficient to ensure the animal does not regain consciousness.

A captive bolt stunner should NOT be used for the temporal approach outlined above for fire-arms.

The manufacturer's directions should be followed on the most appropriate blank cartridge to use for the size of the pig and for storage. 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 that delivers a knockout blow to the skull. The penetrating stunner has a narrow bolt that is driven a short distance into the brain. The penetrating type of captive-bolt stunner is recommended, as it is more reliable at delivering an effective stun in pigs. The concussion stunner (non-penetrating) is not recommended.

(v) 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 frontal shooting in Figure 1. The unconscious piglet should then be immediately bled out to ensure death.

Evidence of instant death

The following signs indicate that a 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 nine months.

Approved authority: Local or State government entity with relevant statutory authority.

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

Boar: an uncastrated male pig over nine months of age.

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

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: a 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, while at the same time maintaining the comfort of the sow.

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

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

Dry sow stall (or gestation 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.

Elective husbandry procedure: a procedure applied to a pig by a stock-person to prevent common problems experienced in commercial pig herds.

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 stall: an enclosure or stall in which animals enter one at a time to be individually fed.

Finisher: pigs generally above 50 kg live-weight, until they are sold or retained for breeding. The same meaning applies for pigs referred to as 'Finishing'. The term 'finisher' usually refers to pigs that are in the final phase of their growth cycle and may include pigs from 50–70 kg.

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.

Gestation: the period when a sow is pregnant.

Gestation stall: *see* dry sow stall.

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

Grower: pigs generally with live-weights between 20 and 60 kg. The same term can apply for pigs referred to as 'Growing' (i.e. throughout the entire growth period cycle from weaning to finishing).

Growing pigs: weaners, growers and finishers.

Husbandry: care and management practices in pig keeping.

Hut: *see* 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.

Operator: a person or entity that manages a pig production unit.

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-person to consider that the welfare of a pig is being compromised.

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

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.

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.

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

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

Stockmanship: the knowledge and skill of caring for pigs.

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 drain the blood from an animal.

Weaner: a pig after it has been weaned from the sow up until approximately 30 kg in live-weight.

Weaning: the act of permanently separating piglets from the sow.