



Supplementary resources for members of local ethical review processes

Pigs: Good practice for housing and care



Research Animals Department, RSPCA
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Before using these guidance notes, please read the introductory sheet that accompanies this series:
Supplementary resources for lay members: an introduction

Natural history

Modern domestic pigs are derived from the wild pig, *Sus scrofa*. They are social animals who form groups with a well-defined social structure and dominance hierarchy. Natural groups in the wild typically comprise a small number of sows and their offspring; the only males are juveniles. Adult males tend to live alone, but can also live in small bachelor groups. Pigs are very vocal within their group and communicate with each other by a complex series of grunts and squeals.

Both wild and domestic pigs dedicate a large amount of their time to foraging and eating. They have a very varied diet and will eat almost anything that has nutritional value including roots, shoots, fruits, worms, amphibians and rodents. They have an excellent sense of smell and their noses are very sensitive tactile organs. This makes a pig's nose the main tool for exploring the animal's environment and finding food. Manipulating the ground with the nose (rooting) is an extremely important behaviour, so important that in the absence of a suitable rooting substrate, domestic pigs will redirect this behaviour and manipulate items in the pen, including cage bars and pen-mates, with their noses.

The complex foraging activities of pigs have resulted in them evolving into intelligent and highly inquisitive animals, who require a suitably stimulating environment, otherwise they will become bored and may develop abnormal behaviours.

What pigs need

The following list of requirements has been defined on the basis of published animal welfare studies that have evaluated pigs' preferences and needs. Different breeds may differ in their exact preferences, but all pigs (including minipigs) have the same basic needs. Supporting evidence and further information on pig welfare, housing and care can be found in the references listed at the end of this document.

- **Social housing**

Sows and juvenile pigs naturally form close-knit groups and become distressed when separated from other group members, even for short periods of time. They should therefore be housed in harmonious, stable, social groups. If, for compelling scientific or veterinary reasons, individual housing is necessary, they should be housed so that they can see, smell and hear other familiar pigs.

Adult boars tend to be kept alone to minimise aggression between them, but it may be possible to house them in pairs if they have been reared together since they were young.





- **Pens of adequate size**

Pens should be spacious enough to allow the occupants to perform a range of normal behaviours and to keep their different activities such as feeding, lying and excretion separate as they would normally do.

- **A suitable floor**

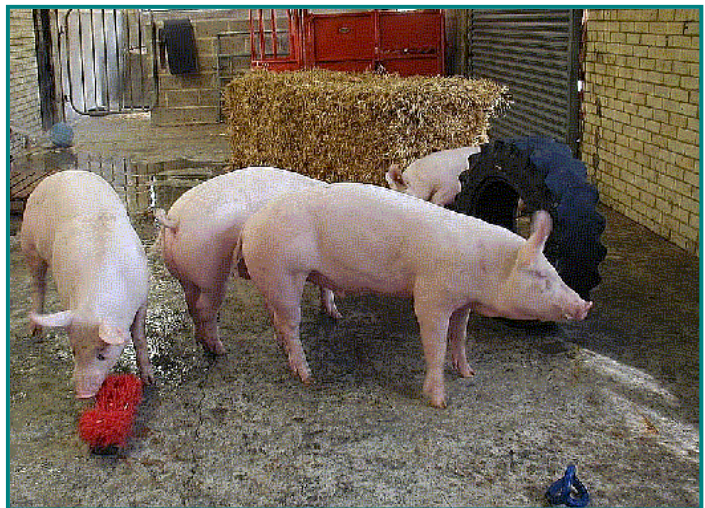
All pigs should have access to an area of solid floor to lie on that is both solid and comfortable and allows all of them to comfortably lie on their sides at the same time. If pigs are to be housed in experimental facilities for long periods they should have access to an area of non-slip concrete floor which will abrade their hooves and reduce any need for trimming.

- **Something to root and forage in**

Rooting is an extremely important behaviour for pigs so they should be kept on, or have access to, litter materials such as straw, wood chippings or wood shavings to facilitate this behaviour. Providing litter has an additional advantage in that food items can be buried in it, which allows the animals to forage in a natural manner. Litter also helps reduce any physical discomfort and can be provided even where specific hygiene standards are required, since many suitable materials can be autoclaved, and drains can be covered to prevent blockages.

- **Additional environmental enrichment**

Providing food that requires manipulation, such as apples, is good practice and pigs also benefit from 'toys' designed to satisfy their rooting, mouthing and chewing behaviour. The most attractive items are those that are flexible and that can be manipulated in their mouths, for example, rubber dog toys, lengths of hose-pipe, hanging chains with items tied to them, and strips of fabric tied to the bars of the pen. All such items are easily cleaned so they can be used in areas where sterility is required. Keeping toys clean is also important because pigs find them unattractive when soiled. Novelty is key to ensuring a pig's continued interest, so toys should be changed regularly, unless an animal has an individual favourite item. Brushes, or other suitably rough materials, mounted on the side of the pen, allow pigs to perform rubbing and scratching behaviours.



Pigs also benefit from being let out of their pens for daily exercise where the design of housing facilities allows this.

- **Adequate feeder/drinker space**

If food is offered at particular times of day rather than *ad libitum*, all the pigs in a pen will attempt to eat at once. If they cannot all fit around the feeder together there will be competition for space and this can cause aggressive behaviour. This can be avoided by ensuring there is enough space for all pigs to feed simultaneously. Adding solid head barriers between each feeding place can also help. Alternatively, offering feed on an unrestricted basis reduces the incentive of pigs to all feed at once, but may be unsuitable for long term studies where obesity may become a problem.

Pigs are particularly sensitive to water deprivation so group housed animals should have access to at least two drinking points or a large communal drinking bowl.



- **A means of cooling in hot conditions**

Pigs do not have sweat glands to help to keep them cool and are particularly susceptible to heat stress. Temperature control systems should be used to maintain ambient temperatures within the comfort zone suited to the age and size of pig. Fans should be used in hot weather, especially for larger pigs. Pigs may benefit from splashing around beneath a light water shower in hot weather and some facilities provide shallow “paddling pools” which the animals enjoy using.

- **Human interaction**

Pigs who are routinely allowed to approach humans and are rewarded by patting and scratching will be calmer and less fearful during research procedures. Staff should therefore take time to interact with the pigs whilst carrying out their daily routines. Handling should take account of the animals’ natural behaviour, and a programme of Positive Reinforcement Training (e.g. offering a food reward for a desired behaviour) will make handling easier for both animals and staff.



Potential husbandry related welfare problems and how to resolve them

The potential problems listed below are indicators of poor welfare and there should be management strategies in place to prevent them.

Abnormal behaviours include stereotypies such as bar biting, vacuum chewing, dog-sitting and tail and ear biting. Tail biting can develop into cannibalism if left unchecked, and the wounds sustained are not only a welfare problem in themselves, but may also become infected. All of these undesirable behaviours are an expression of boredom and frustration. They can be prevented or alleviated by providing pigs with a stimulating environment, including substrate to manipulate and toys to play with.

Leg and foot problems can result from pigs gaining weight at a rate that is faster than their bones can sustain, from other genetically-related characteristics, or from inappropriate floor surfaces e.g. slats. Regular exercise, appropriate diet and provision of a cushioning substrate may help reduce the problem.



Pig housing and care: ERP aide-memoire

- ❖ Social housing in harmonious groups for sows and juveniles; boars kept singly (or possibly in pairs if reared together from birth)
- ❖ Any individually housed animals can see, smell and hear other familiar pigs
- ❖ Pens of adequate size to allow separation of feeding, excretion and lying areas, and to enable environmental enrichment to be provided
- ❖ A solid, comfortable floor which allows all pigs to lie on their side at the same time
- ❖ Litter (e.g. straw, wood chips or shavings) to root in
- ❖ Additional environmental enrichment for manipulation, rubbing, scratching and foraging behaviours
- ❖ Adequate feeder space to enable all pigs to feed simultaneously with easy access to water
- ❖ Temperature control within the thermal comfort zone with a means of cooling in hot conditions (e.g. a shower or 'paddling pool')
- ❖ A good level of positive human interaction
- ❖ Any individually housed animals can see, smell and hear other familiar pigs
- ❖ A good level of positive interaction with humans

Notes



Recommended references

1. DEFRA (2003) *Pig Welfare Code*.
www.defra.gov.uk/foodfarm/farmanimal/welfare/onfarm/documents/pigcode.pdf
2. FELASA (2007) *Euroguide on the Accommodation and Care of Animals Used for Experimental and Other Scientific Purposes: Based on the Revised Appendix A of the European Convention ETS123*. London: FELASA. Available for purchase at www.rsmppress.co.uk/bkfelasa.htm
3. Grandin T (2002) Comfortable quarters for pigs in research institutions. In: *Comfortable Quarters for Laboratory Animals*, 9th edn (V & A Reinhardt eds), pp 26-32. Washington DC: Animal Welfare Institute, www.awionline.org
NOTE: the 10th edition of *Comfortable Quarters* is under production at the time of writing.
4. RSPCA (2010) *Welfare Standards for Pigs*.
www.rspca.org.uk/sciencegroup/faranimals/standards/pigs
5. van Putten G (2000). An ethological definition of animal welfare with special emphasis on pig behaviour in: *Proceedings of the Second Network for Animal Health and Welfare in Organic Agriculture Workshop*; www.veeru.reading.ac.uk/organic/proc/vanP.htm
6. Watson L (2004) *The Whole Hog: Exploring the Extraordinary Potential of Pigs*. London: Profile Books Ltd.
7. Holtz W (2010) Pigs and minipigs. Ch. 32 in: *The UFAW Handbook on the Care and Management of Laboratory and Other Research Animals*, 8th edn, pp 380-398. Wiley-Blackwell.



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