

Management as the basis of disease control

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The aim of every member of the farm team should be to promote health rather than treat disease. Understanding the normal behaviour and habits of pigs is an essential precursor to designing suitable accommodation for pigs and thus maintaining their health. With total born reaching 15 and numbers weaned to 12; a rethink of the buildings currently in use may be necessary to continue providing an adequate environment.

This article looks at the major behaviours of the pig and how understanding and managing these behaviours provides the pig with a healthier environment.

Sleeping

Pigs, especially young growing pigs, sleep most of the day. The sleeping area is therefore an essential component to the design of the pen. Unfortunately, most pig buildings provide adequate lying areas, but poor sleeping areas. Pigs require a sleeping area which is dry, draught free and at the correct temperature.

Each day stock people should examine their pigs to check they are sleeping comfortably.

The first concern is that there is sufficient space. It is vitally important that the stock people understand the different postures portrayed by sleeping pigs and correctly interpret their meaning.

● **Too cold.** Cold pigs lie on the floor with their legs tucked under their body to reduce floor contact. They lie huddled with other pigs and may shiver. The cold pigs may become hairy. With larger pigs they seem unable to adopt this tucked position for very long and tend to lie semi-recumbent with their legs tucked into their body.

● **Comfortable.** Within a group of pigs there will be a selection of lying patterns. The main group of pigs will sleep together in a pile, however other pigs will be lying spread out but with maximum contact with the

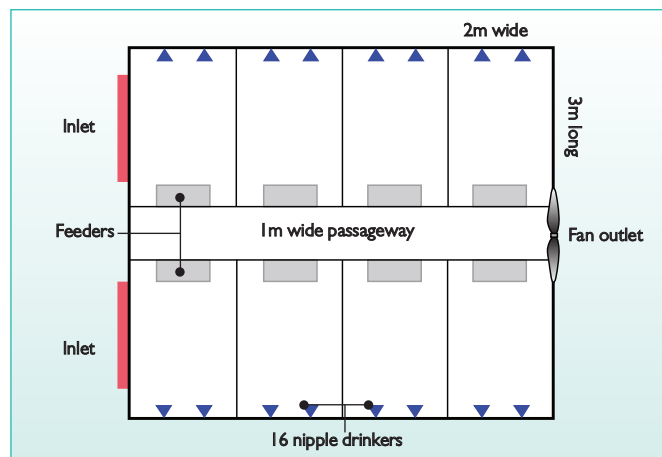


Fig. 1. Example of a farm nursery design with four pens either side of a central passageway.

floor. These separated pigs will be the more dominant pigs. The lower order pigs will lie on the edge of the main group. Pigs sleep with legs stretched out from the body.

● **Too hot.** Pigs will be panting >40 per minute. Pigs are generally dirty, lie away from other pigs, sometimes against a cold wall, and they do not pile. Hog pigs lie in any wet/cooler area. Pigs will dig into earth/bedded floors and can destroy the building. The sleeping pattern and the posture of the pigs provide an acute indicator of pig comfort.

Defecating

Pigs are inherently clean animals and avoid lying in faeces. The defecation pattern of the pen provides a good chronic indicator of comfort.

When the pigs leave a building, examine the defecation pattern and explain any unusual pattern. The problem, normally with the ventilation system, must then be resolved before the next batch enters the building.

Eating

To provide comfort while eating it is essential to provide sufficient feed space. The most important time when feeder space becomes signifi-

cant is in the first week post-weaning. At this time the newly weaned pigs feed as a group and require 100mm per pig rather than the 50mm offered on ad lib. This reduces feed intake and growth post-weaning.

With restricted feeding, any pig which fails to enthusiastically eat with its peers can be rapidly recognised and marked for further investigation.

The best indication that the feed is adequate is to examine the growth rate of the pigs.

To provide an indication of

growth, every time a pig is moved it should be weighed.

Water

Stock people are required to understand the daily water requirements and the behaviour of the pig while drinking. On many farms water is taken for granted. Pigs which have restricted water supplies will both grow slower and have more disorders. Classical indicators that there is a problem with the water supply include:

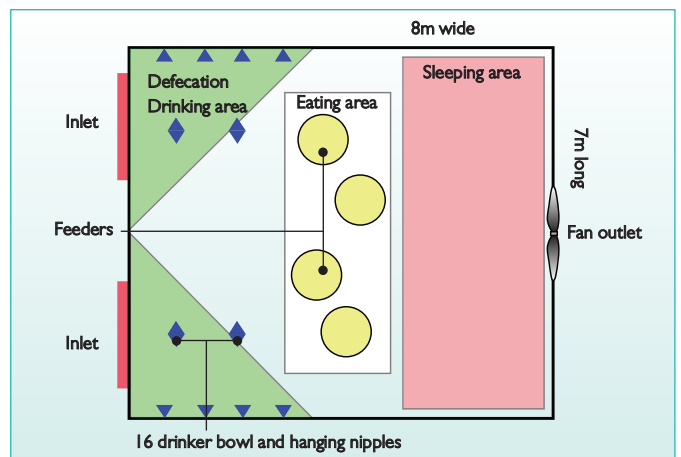
- Left feed.
- Dirty drinkers.
- Pigs drinking all night.
- Crowding around the drinkers.

Play

Any stockperson watching a group of pigs will soon be amused to observe their play activities. Play prepares them for situations and trains survival skills. Providing an environment where pigs can explore their play behaviour can help relieve stress and allow the pig to cope better if their environment is temporarily adverse. Pigs gain comfort and support from other pigs and/or other animals. Pigs should not be kept in isolation, including boars.

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Fig. 2. Modification of the building design in order to accommodate pig behaviour and habits.



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There may be obvious exceptions, when the pig is under treatment for meningitis or a severe lameness.

However, once the pig is over the critical stage of the condition it should be housed with other pigs of a similar weight and age.

All wean to finish pigs should be provided with toys. The simplest toys are often the most effective. Pigs love to play with chains, rattles, large plastic bottles, rubber belting, old boots and feedbags.

Enhancing pig health

So, how can all of these behaviours be applied to enhance pig health? All stock people must become familiar with these five areas of normal behaviour. In addition each area of production has other behaviours which apply. Using these five behaviour areas a better building can be designed which promotes health.

For example, the design of the nursery requires:

- **Floor:** A pig to 30kg requires 0.3m² total floor space.
- **Water:** One water nipple drinker to 10 pigs or one bowl to 20 pigs.
- **Feed:** Feed space requirement at weaning is 100mm per pig for the first three days (restrict fed), afterwards 50mm per pig to 30kg (ad lib fed).

● **Air:** Movement should be less than 0.2m/s in the sleeping area. Ambient air temperature in the sleeping area should be 30°C at weaning to 24°C at 30kg. The sleeping area needs to be draught free.

Fig. 1. shows an example of a farm nursery design with four pens either side of a central passageway.

The total unoccupied floor area is:

● $(2 \times 3\text{m pens}) \times 8$ [pig floor area] minus $(1 \times 0.3) \times 8$ [feeder space] = 45.6m².

● A 30kg pig requires 0.3m² per pig (EU directive). Thus a total of 152 pigs at 30kg.

● With a 97% nursery survival rate; pigs weaned into the nursery is: $152 \times 1.03 = 157$.

● With 10 weaned per farrowing place – this results in 16 batch farrowing places.

● With a €0.10 differential between cost of production and income and 95% finishing rate (survival rate to slaughter) this results in a profit of about €1200 per batch.

With this building there is poor space utilisation – the passageway is 8m² – room for an additional 27 pigs. There is a differential air temperature and speed around the house.

The pen nearest the door is colder and has more draught than those by the outlet fan. The whole house has to be at 30°C as the pigs are expected to sleep in all the pens –

despite the fact that some pens/pigs may have a draught.

The water supply is along the whole house making the defecation area to be along the outer wall – which reduces the optimal sleeping area for pigs. Pigs like to lie against a wall. The feeder spaces are rectangular so their position demands a long feed line.

The pens are not wide enough to allow for adequate feeder space in the critical three days post-weaning when the pigs are restrict fed rather than ad lib at which point they require 100mm per pig.

As the farm's output increases with increases in pigs weaned, the building has to be modified to accommodate 192 weaned pigs (16 x 12 weaned) and still keep the pigs healthy.

Modification of the building to accommodate the pig's behaviour and habits is shown in Fig. 2. The proposed building design utilises the whole floor area. The use of circular feeders reduces the space occupied by the feeders.

Thus the number of pigs which can occupy the building at 30kg can be calculated:

● $8 \times 7\text{m}^2$ [floor area] minus $(0.785 \times 0.7 \times 0.7\text{m diameter} \times 4)$ [feed area] = 54.3m².

● This provides space for $55.1 / 0.3$ pigs = 180 pigs at 30kg.

The temperature can be differenti-

ated around the room to provide 30°C in the sleeping area for the newly weaned pigs and a cooler 24°C in the drinking system, thus reducing the electricity bill.

This increases the ventilation in the room which reduces humidity and enhances the respiratory tract defences.

There is sufficient space to allow for the sufficient feeder space for the first three days post-weaning by using additional trough feeders.

The enhanced use of the floor space providing room for more pigs increases the profit potential out of the building.

The increase in the number of these marginal pigs increases the profitability of the batch to over €2,300 per batch.

Summary

A better understanding of the behaviours and management of pigs allows changes in management that helps to reduce the impact of pathogens.

The increase in the number of pigs weaned forces a rethink in post-weaning accommodation to keep stocking densities within healthy tolerances. Buildings should be examined to satisfy the behaviour requirements of the pig in order to set pig flow targets. ■