



The farrowing house is a key department in determining the productivity of a unit. Attention to detail at all times is vital for achieving the full potential of both piglets and sows.



Maximise neonatal piglet survival – aim for a pre-weaning mortality rate of 10.3%* or better

Produce healthy weaned piglets – aim to rear at least 11.2* piglets per litter

Minimise loss of sow body condition – aim to maintain a BCS of 3.

* Based on Agrosoft data, September 2010, top third of UK indoor breeding herds

What environment does a newly born piglet require?

Newborn piglets are poorly equipped to keep warm immediately after birth, as they:

- Are born wet
- Have a large surface area to body mass
- Have limited energy reserves (brown fat) to produce body heat
- Do not have hair to insulate

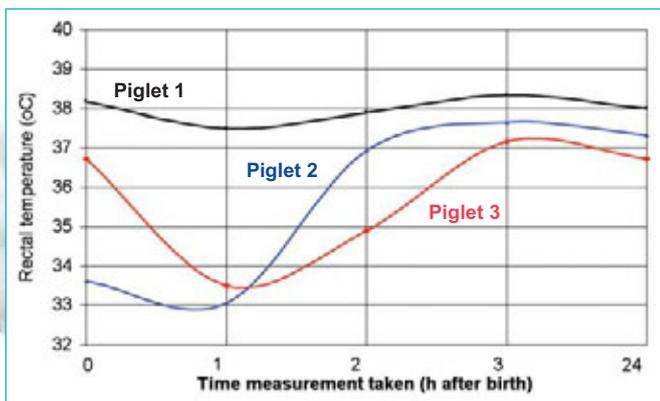
The critical factor which producers can control is limiting heat loss and facilitating a reversal and steady increase back to their normal body temperature.

Without a temperature rise piglets will become lethargic, less competitive and more prone to starvation, disease and death.

It is important to provide an environment at farrowing that is dry, warm and draft-free. This can be achieved by:

- Providing supplementary heat lamps during farrowing, one ideally positioned towards the rear of the pen

The importance of limiting heat loss



Piglet 3 died as its body temperature did not rise quickly enough
Source: Dr E Baxter, SAC

- Providing bedding to reduce drafts from beneath the slats and to help dry the piglets at birth
- Maintaining a farrowing house/room temperature of 22–24°C until the room has farrowed, providing this is completed within two to three days.

An important route for increasing piglets' body temperature is through suckling. Sows must be calm and relaxed during farrowing and present their teats so that they are easily accessed by their piglets.

To provide an environment that will encourage this behaviour:

- Ensure that the sow or gilt is in the correct size crate so that she can lie comfortably
- Adjust the bottom rail where possible allowing her to expose both rows of teats
- Leave a radio on for background noise if some of the sows are anxious when hearing strange noises
- Assist the sow in expressing her normal nesting behaviour by providing bedding/paper bag or a piece of rope or toy attached to the farrowing crate. This behaviour relaxes the sow and makes her more likely to lie calmly and suckle her litter.





What environment promotes the production of a healthy weaned piglet?

This is where attention to detail is very important. The main objective is to minimise any illness in the piglets and then to prevent the transfer of disease to healthy piglets. Some of the management practices available to help create an environment in which piglets can thrive are to:

- Operate an all-in all-out system that facilitates thorough cleaning, disinfection and drying between each batch
- Keep separate equipment for each house and clean piglet equipment between litters
- Provide foot dips for each house and intra-house in cases of piglet scour outbreaks; ensure these are managed properly and used appropriately
- Maintain the integrity of the farrowing house flooring, repair cracks and remove any pooling of liquid through poor drainage or leaking pipes/troughs
- Replace old wooden pen divisions with robust, non-porous, easily cleaned and quick drying materials.



Using footdips will minimise the transfer of disease

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How can loss of sow body condition be minimised?

It is important to provide an environment that stimulates good Voluntary Feed Intake (VFI). In the farrowing house it is necessary to provide two distinct environments, as shown in the table below.

Category of pig	Age (days)	Temperature requirement °C
Piglet	1–3	28–32
Piglet	4–7	25–27
Piglet	8–14	23–26
Piglet	15–21	21–24
Piglet	22–28	20–22
Sow		16–20

The sow's requirement for nutrients increases daily as her lactation progresses and demand for milk from the piglets increases. Her VFI, therefore, has to increase, otherwise she will start to mobilise her own reserves and lose body condition. Unfortunately, as the room temperature rises above 16°C, VFI will decline, initially at a rate of 170g/day per 1°C rise in temperature. The sow's environment can be influenced by:

- Providing a covered creep which enables the farrowing room temperature to be run at 18–20°C
- Thermostatically controlling the temperature of the creep heat source and programming a temperature curve to reduce over time
- Regularly checking that heat mats, if used, are operating correctly
- Providing supplementary cooling, where possible, during hot periods
- Ensuring sows always have a plentiful supply of fresh, clean water; the flow rate should be 2 l/minute for a nipple or bite drinker.

The aim should be for sows to lose no more than 0.5 in BCS throughout the lactation; this will increase the likelihood that she will successfully rebreed within six days post weaning.

Further information

Action for Productivity 10: Cleaning and Disinfection
 Action for Productivity 14: Newborn Management
 Action for Productivity 16: Water Supply
 Work Instruction 3: Preparing a farrowing crate
 KT Bulletin 11: Advantages of covered creep areas



Financial benefits of increasing survival rates

There has been a gradual reduction of time available for the farrowing department and individual litter management with batch farrowing enterprises.

With the data collected providing important signposts for improving performance, it is important to reassess the cost benefit of strategic labour deployment to allow time for the adoption of colostrum management techniques and the effective establishment of new born piglets. Further information is given in Action for Productivity 14 and 17.

The following table provides a means of evaluating the potential financial benefits of increasing survival rates and how you can assess the benefit of this against anticipated extra labour costs.



It is important to allocate time to establish newborn piglets.

	Example	Your herd
(A) Number productive sows and gilts	350	
(B) Farrowing index	2.33	
(C) Current number piglets born dead & number of pre-weaning deaths	0.8 plus 1.4	
(D) Target number piglets born dead & number of pre-weaning deaths	0.6 plus 1.2	
(E) Number extra pigs weaned per litter (C – D)	0.4	
(F) Number of additional pigs weaned/annum (A x B x E)	326	
(G) Increase in net margin/year assuming no additional labour costs required (based on BPEX Yearbook 2009 costs and prices for breeder finisher herds)	£20/pig weaned	
(H) Increase in net margin/year for the unit assuming no additional labour costs required (F x G)	£6,560	
(I) Additional cost of extra labour/year (Estimate the amount of additional cost to achieve targeted performance improvements, for example 10 hours/week at £8/hour for 52 weeks)	£4,160	
(J) Increase in net margin/year after deduction of additional labour costs (H – I)	£2,400	

Piglets that are successfully reared through to weaning are the essential building blocks for the sale of finished pigs and income to the business. Improving the number of pigs born alive and piglet survival rate through to weaning has a significant impact on profitability – an increase of 1.3 pigs weaned per litter (the difference between average and top 10% performance) improves net margin by £60 per sow per annum (based on costs and prices reported in the BPEX Yearbook 2009).



- Total born: aim for 13+
- Born alive: aim for 12+
- Pre-weaning mortality: aim for 10% or less

Based on top 10% national figures 2009

As well as having a significant impact on herd profitability piglets born and mortality are two of the most straightforward areas of the pig herd to record and monitor. All the activity you need to record happens over a short period (farrowing to weaning) and, on indoor units, within a relatively compact and dry space.

An individual sow card can be used to record numbers born and the age, piglet condition and causes of pre-weaning mortality. Keep the recording as simple as possible and capture useful information, for example to track piglet fosterings.

Sow number & parity	Starvation	
Farrowing date	Weak/poor viability	
Number born alive	Chilled	
Number born dead	Agalactia/mastitis	
Number born mummified	Overlaid	
Piglets fostered on	Savaged	
Piglets fostered off	Splayed legs	
Pre-weaning deaths –	Infection/diarrhoea	
Record number and age of piglets deaths	Other: note detail e.g. deformity, meningitis etc	
Small non-viable	Total weaned	

It is important to decide with your staff the definitions you will use to ensure you are consistent in the way you record deaths. For example agree how you will differentiate between small non-viable and weak/poor viability.



Analysing data from your records

Totalling up each month or per farrowing batch will illustrate your successes and highlight areas where you can improve.

Total born tells you about the overall lifetime management of the sow, from gilt introduction to point of first service, sow condition, nutrition, service, environment and management of the parity profile.

Mummified pigs may indicate a herd health problem and possibly the need for improved hygiene and a vaccination programme.

Pigs (healthy) born dead tells you whether your management at and around farrowing is adequate. It is important to record these piglets as usually they were capable of life but a slow farrowing resulted in death. Monitoring and assisting farrowings where appropriate, especially for older sows, can reduce stillbirths and improve the survival of pigs born alive.

Small non-viable pigs may be linked to an aged herd profile, with older sows having more variable piglet weights, inducing sows to farrow too early, herd genetics and PRRS (Blue Ear). It can also indicate that you need to look at how you feed the sow during gestation.

Pre-weaning mortality and causes provides valuable pointers to how survival rates can be improved. It is important not to rely on recorded data alone, but to combine this with quality stock observations. For example your records might highlight that a major cause of death is overlying. Stock observation will help you determine whether this is primarily due to:

- over fat clumsy sows
- creeps that are too hot or cold
- drafts leading to restless sows and chilled pigs
- poor crate design
- lack of milk so piglets are continually close to the sow and in the danger area.



Are piglets too hot or too cold?



Are piglets getting enough milk?

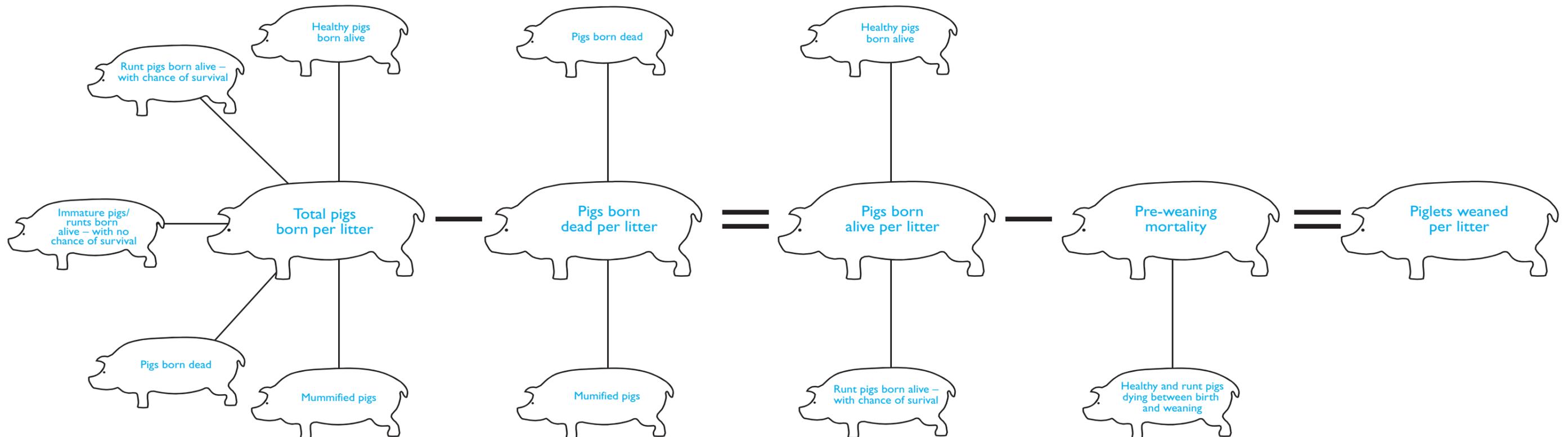
It is also important to look at the data in a joined-up way. For example high stillbirths can be associated with increased post-weaning mortality as piglets born alive may have been weakened as a result of a protracted farrowing and be more susceptible to overlying.

Farrowing performance

The farrowing performance of similar herds can be used to provide a standard to assess your herd's performance against and the scope for improvement. Setting your own targets will enable you to track progress as you put new management practises into effect. Use the table below to set targets for your unit.

Industry averages	Average	Top 1/3	Top 10%	Your herd	Your targets
Born alive per litter – average all herds	11.1	11.7	12.2		
Outdoor herds	10.9	11.3	12.0		
Indoor herds	11.4	12.0	12.3		
Born dead per litter – average all herds	0.6	0.7	0.7		
Outdoor herds	0.5	0.5	0.6		
Indoor herds	0.6	0.7	0.8		
Mummified – average all herds	0.2	0.3	0.2		
Outdoor herds	0.0	0.0	0.0		
Indoor herds	0.3	0.4	0.1		
Total born per litter – average all herds	11.9	12.63	13.1		
Outdoor herds	11.4	11.8	12.6		
Indoor herds	12.4	13.1	13.2		
Pre-weaning mortality (%) – average all herds	12.6	11.1	10.3		
Outdoor herds	12.3	11.2	11.8		
Indoor herds	13.0	10.5	9.6		
Reared per litter – average all herds	9.7	10.4	10.9		
Outdoor herds	9.5	10.1	10.5		
Indoor herds	10.0	10.7	11.1		

Source: BPEX Pig Yearbook 2008





BREEDING

Preparing the Farrowing Crate

Providing the correct environment for both sows and piglets in the farrowing house will help to minimise mortality and maximise growth rate of the piglets and maintain the sow in good condition for the next cycle. A well prepared and organised farrowing room will make your role easier and more productive.

Equipment required	Personal safety
<ul style="list-style-type: none"> Farrowing kit Sow cards Min/max thermometer 	<p>Sows can be unpredictable. Only competent staff should move sows/gilts into the farrowing house</p>

Initial checks

- Ensure pressure washing, disinfection and drying of the entire room taken place
- Ensure pressure washing, disinfection and drying of all extra equipment such as scrapers and creep feeders taken place
- Ensure all fixtures in good condition including the crates, drinkers troughs and flooring – repair or report damage to your manager
- Ensure all sow and piglet drinkers working and providing the relevant flow rate
- Ensure all automatic feeders working
- Ensure the wiring on the creep lights been checked
- Ensure the lights, fans and heat mats working effectively
- Ensure the farrowing kit is replenished and readily available in the farrowing house
- Ensure the room is warm, dry, draught free and effectively ventilated

- Move bedding from storage area to farrowing room
- Check that the medicines store has adequate store of relevant drugs
- Check availability of liquid colostrums, supplementary milk etc
- Remove faeces from the crate at least once a day

When the sow or gilt shows signs of starting to nest or farrow:

- Place enough bedding around the back of the sow to eliminate drafts and provide a comfortable, dry area for newborn piglets
- Place a heat source towards the back and or side of each sow
- Place the heat source in a position so that it cannot be reached by the sow and will not hinder your access to the sow
- If using heat mats, turn on and check temperature with infrared thermometer
- Place bedding in creep, switch on lamps (creep, side and or rear) and check temperatures –

Should be 30°C on the surface in the creep area

Outline of the work

- Move all required equipment into farrowing room
 - Replace all equipment in the correct place
 - Check creep lamps and heat mats are working
 - Move sow into crate and adjust crate to correct size for individual animal
- Ideally the sow/gilt should be put in the crate at least three days prior to farrowing**
- Place the history of each sow above/near the relevant farrowing crate



Sow records next to pen



Cleaned house with boards removed



Bedding behind/to side of sow



Creep area

Additional Information

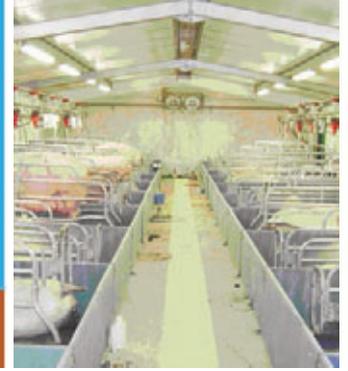
The Welfare of Farmed Animals (England) Regulations 2007 has specific requirements for farrowing including:

- Pregnant sows and gilts must be thoroughly cleaned before being placed in farrowing crates
- In the week before the expected farrowing time, sows and gilts must be given suitable nesting material in sufficient quantity unless it is not technically feasible for the slurry system used
- During farrowing, an unobstructed area behind the sow or gilt must be available for the ease of natural or assisted farrowing
- Farrowing pens where sows or gilts are kept loose must have some means of protecting the piglets, such as farrowing rails

Reference documents

The Welfare of Farmed Animals 2007, Defra
The Farrowing House Tool Kit, BPEX

www.defra.gov.uk
www.bpex.co.uk



Investing for the future is a 'No Brainer'

Farm facts

Name: Patrick Dean Ltd
Location: Boothby Grafoe, N Lincolnshire
Farm size & enterprise: 520 sows farrow to finish

Benefits

- Reduced pre-weaning mortality
- Improved weaning weight from 7 kg to 8.4 kg (28 days)
- Less time required to feed and clean each day
- Use of power and water has decreased

	Total mortality (%)	Overlaid piglets (%)
Disused farrowing house	15	10
Old farrowing house	9	7
Nooyen farrowing house	6	1

Background

The now disused farrowing accommodation needed replacing so Patrick Dean Ltd decided to invest in facilities that would improve performance, sow and piglet welfare and reduce the time and, initially, the labour force required to run the department.

The new farrowing accommodation includes 72 Nooyen Balance farrowing crates. However, even these modern crates were fine tuned to give optimum performance.



“Our mission is to continually reduce our cost per kg liveweight gain. One way is to reduce our fixed costs by increasing our output and improving our labour efficiency. Using the Nooyen farrowing crate has helped us achieve both these objectives”

Ian Smith, farm manager

	No. people	No. crates	Time taken to clean
Old farrowing house	1	12 crates	6 hours
Nooyen farrowing house	1	24 crates	4 hours

Key to success

Investment - this is the primary reason the unit is achieving nearly 27 pigs weaned per sow per year which, with their 3% post-weaning mortality, means they are regularly selling 25 pigs/sow/year.

The first 48 crates are now six years old and each 24-crate farrowing house is producing an extra 20T finished pig per year compared with the now disused accommodation. With the initial reduction in labour force, payback for the first 48 crates was just two years; going forward payback will still only be four years.

The Nooyen system

- Gently undulating floor prevents the sow 'dog sitting' and sliding down onto her piglets
- Mobile bottom rail set to allow full exposure of teats irrespective of sow size
- Adjustable width to tailor the crate to the size of the sow
- Side opening crate, which in conjunction with a removable front partition, provides the sow with an easy exit at weaning time
- The crate balance system, which is operated by a sensitive pressure plate under the sow, is switched off after five days as it is no longer required