



BREEDING

Newborn management (indoors)

Newborn piglets are poorly equipped to keep warm immediately after birth and as the energy reserves to produce body heat (glycogen stored in the liver) are limited, the combination of factors below means that piglets often become chilled. Piglets are also born with no immunity and can only get this from colostrum soon after birth. A minimum of 100 ml of colostrum per kilogram of birthweight within the first 16 hours is crucial to provide the energy, nutrients and antibodies needed for survival.

- Small size means they lose heat fast
- Lack of brown fat (no internal heat source)
- Little surface fat and no hair (no insulation)
- Born wet with birth fluids (further chilling)



Reduce mortality (of pigs born alive) to below 9%

(Agrosoft data – top 10% UK indoor breeding herds)

Increase pigs reared per litter to at least 11.20

(Agrosoft data – top 10% UK indoor breeding herds)

Improve weaning weight, aim for 8 kg at 28 days

How can you help the newborn piglet and ensure a good start in life?

Monitor farrowing

Being present at farrowing is a critical part of good farrowing house management. If not possible on your unit, ask yourself why not? Consider altering routines or rotas to provide cover at this crucial time or discuss with your vet the practicalities of using products to promote farrowing during the daytime, when you can be present.

Colostrum

- Colostrum is the 'first milk' and an essential source of energy, nutrients and immunity for the piglet
- Colostrum is critical for development of the piglets' own immune system and optimum lifetime performance
- Maximise colostrum intake in the first 6 hours after birth achieving at least 100 ml intake per kilogram of birthweight by 16 hours post farrowing. For example, a 1.45 kg piglet would need a minimum of 145 ml colostrum
- Beyond 24 hours is too late as the piglets' intestines can no longer absorb the large antibodies found in colostrum
- Colostrum is only available in quantity for about 12 hours and after 20 hours the sow will be producing milk and not colostrum

Fostering management: Cross fostering

Make sure all staff are aware of your farm fostering policy. Sometimes practices change for the better but can revert back if your cover staff are not aware of the changes. Wherever possible leave piglets with their own mothers to avoid disruption of the litter suckling patterns; even big piglets looking secure and strong will experience growth checks if fostered, especially if moved around frequently.

Fostering management: Even up numbers of piglets per litter

Matching the number of piglets to the number of functioning teats allows each piglet to have easy access to the colostrum produced after farrowing. This improves piglet survival rates and increases the chance of piglets achieving their potential growth rates.

Fostering management: Helping low birthweight piglets

It is a great disadvantage for small piglets to have to compete with larger littermates. Litters of small piglets should be created from all the 'small's' born in a given farrowing day. Foster-litters of small piglets should be put with low-parity sows; the teat size of a low-parity sow will match the small mouths of the small piglets.

Fostering management: Piglet sex

In general it is the female pigs within a contemporary group which are best able to cope with management changes. Consider fostering female piglets rather than males when possible.

Remember: Colostrum deprivation will reduce LIFE LONG survivability and LIFE LONG performance, see Table 1.

Rules of fostering

- Foster within the first 24 hours
- Ensure foster piglets get early colostrum, preferably from their own mother, or if not then from a very recently farrowed foster mother
- Give the smaller piglets warm colostrum (sow, artificial or pasteurised bovine) or glucose
- Foster only once, it can be detrimental to keep moving litters around
- Never have more piglets than functioning teats on sows
- Remember, small piglets find suckling from large teats difficult
- Foster within a room (batch of piglets) wherever possible, don't move health problems to other groups

Observe piglet behaviour

- Look out for fading piglets and take remedial action by fostering and providing electrolytes or additional milk
- Check for signs of ill health and treat according to unit veterinary protocol
- Ensure piglets are lying either on or under the heat source and not piling together, indicating chilling



Table 1 Ensuring colostrum intake

Actions	When to use it	How	Time taken
SPLIT SUCKLING	Litter size is large. Considerable variation in piglet size.	Split the litter into two groups. Initially enclose the group of heavier, stronger piglets within the creep area, behind a board or in a box, to reduce competition. Allow the smaller, less viable piglets to suckle and then swap the groups over after 90 minutes to allow for 2 sucklings at 40 min. intervals. Both groups of piglets should be able to access a warm environment.	On average 5 minutes for each litter requiring extra help. It is an easy task and can be combined with litter work.
ASSISTED SUCKLING	High numbers of small, low viability piglets have been born. Considerable variation in piglet size.	Supervise and assist the vulnerable piglets to gain access to teats and suckle. Ensure that they are able to suckle unhindered and then mark each piglet once seen to suckle. Consider stomach tubing vulnerable piglets.	On average 10–15 minutes for each litter requiring extra help. This requires considerable patience but can be combined with split suckling.
HAND FEEDING COLOSTRUM	High numbers of small low viability piglets have been born. When creating litters of small piglets.	Milk sows that have farrowed within the last 5 hours. Syringe feed the piglets with the colostrum when establishing the new litter until the suckling pattern is established (the colostrum can be fresh or you can store frozen colostrum and defrost naturally as required).	On average allow at least 15 minutes for milking and feeding the piglets that require the extra help. It can be time consuming but colostrum is essential for piglet survival.



Creep training

Piglets have different thermal requirements to sows, the creep area provides the required environment for the piglets and training them to use this area will provide them with a good start in life. The creep has a secondary advantage of being a safe area where piglets can lie away from the sow and the risk of being laid on.

- Piglets learn the behaviour of using creeps within the first 40–48 hours of life
- Enclose the piglets within a closed creep ie 'train the piglets' as soon as they have finished suckling
- This can be combined with split suckling, saving time by carrying out the two activities at the same time
- Keep piglets in the creep area for approximately 1 hour

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Colostrum is secreted from the udder immediately after farrowing and within several hours its composition changes rapidly to that representing sow milk. Colostrum contains essential antibodies (immunoglobulins) for the health of the newborn piglet; antibodies are produced by the body to kill bacteria and viruses. The piglet is born with very few of the protecting antibodies necessary to thrive and relies strictly on the sow's colostrum to obtain them in the defence against bacteria and viruses.

Colostrum is a rich source of highly digestible nutrients, which are critical to establishing the newly born piglet and studies indicate that colostrum contains natural growth factors for the normal development of vital life-sustaining organs (eg brain, heart, pancreas, liver and kidneys) and the immature gut.



To optimise colostrum production by the sow

To make sure that piglets suckle within 6 hours of birth

To ensure that every piglet gets a fair share of the colostrum
(minimum 100 ml in first 16h)

Colostrum intake by the newborn piglet

- Colostrum intake by the newborn piglet is highly variable and may range from 200 to 450g per piglet
- Intake depends not only on the piglet's ability to extract colostrum but also on the ability of the sow to produce enough for the whole litter
- Many factors can influence both colostrum production and consumption, eg sow parity and nutrition, litter size and piglet vigour at birth
- Piglets with very low birth weights and which lack vigour at birth may not consume sufficient colostrum for survival or for their longer-term health and performance



What happens if piglets consume little or no colostrum?

- The *amount* and *timing* of colostrum consumption are both critical to the subsequent health, development, survival and lifetime performance of the newborn piglet
- Colostrum intake must be optimised as soon as possible after farrowing
- After 6 hours the gut begins to 'close' and after 24 hours the full benefits of the immunoglobulins are no longer available to the piglet
- During this critical window, the piglet is able to rapidly absorb the protective colostrum factors (immunoglobulins) which are essential for good health and performance
- Unless sufficient colostrum has been consumed the piglet remains highly vulnerable to disease
- The minimum threshold requirement for colostrum is unknown; however a general guide is that piglets will consume 150-280 g/kg bodyweight soon after birth



Management guidelines

How can colostrum production be optimised?

Little is known about the factors affecting colostrum production but the rearing strategy for replacement gilts, vaccination policy and the disease and hygiene status of the farm are likely to influence the immunological properties of colostrum.

Apply best sow management principles to ensure high colostrum and milk yields and sow litter productivity:

- Reduce stress before, during and after farrowing
- Feed diets appropriate for pregnancy and lactation (see the Stotfold sow feeding strategy)
- Ensure sows have unrestricted access to fresh drinking water at all times

How can each piglet get a fair share of the colostrum?

● **Supervise farrowing:**

Supervision during and immediately after farrowing should focus on early establishment of piglets at the teats to ensure adequate intake of colostrum; remember the ability to absorb antibodies falls rapidly after 6 hours and is almost completely gone 24 hours after birth

● **Batch farrowing:**

This can assist in the planning and implementation of stockworker supervision of sows and piglets at farrowing

● **Synchronised farrowing:**

The use of synchronising agents needs careful consideration and should be discussed with your veterinarian

● **Cross fostering:**

To ensure colostrum sharing, cross fostering should take place as soon as possible following birth, ideally across sows within 24 hours or sooner after farrowing. If this is not possible, colostrum sharing in large litters should be facilitated by shift (split) suckling

- If porcine colostrum is unavailable, bovine colostrum may be used as a substitute
- Consider milking off surplus colostrum from some sows, freezing and using for compromised pigs (do not defrost using a microwave!). However on most commercial farms, milking sows is not a practical option

For more information on establishing the newborn pig see *Action for Productivity 14: Newborn management*.



Split suckling

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