

H1 - Preparing the farrowing facility and farrowing pen



Farrowing pen, clean and dry, and ready for a sow

A good environment requires clean and dry pens:

1. Soak the pens for 6 - 12 hours.
2. Wash pens and equipment systematically. Be aware of caking in the trough and feed pipes.
3. Disinfect the pens. If a water soluble disinfectant is being used, the facility must be dry as the disinfectant will otherwise become diluted.
4. Dry the pens. The facility must be completely dry before sows are introduced.
5. Check nipple drinkers. Check that each nipple drinker produces min. 4 litres a minute.
6. When sows are introduced, make sure that empty pens are evenly distributed in the facility.
7. Supply straw or other nesting material to the sows in the week prior to farrowing.
8. Adjust the inlet temperature of the floor heat to a surface temperature of 34 - 35°C (max. 36°C) when the heat lamp is turned on. Check this with an infrared thermometer.



Farrowing facility poorly cleaned and still moist, and therefore not ready for sows

If pens are not properly dried:

- A poor environment for the sow and newborn piglets.
- Cold piglets get a poor start in life. They are slow in getting to the udder and thereby in getting milk.
- A cold udder stresses the sow and may cause mastitis.
- Reduced air flow resulting in a poor air quality.

Faeces in pens:

- Increases infection pressure.

Feed remnants/caking in the troughs:

- Low level of hygiene, increased infection pressure and reduced appetite among the SOWS.

	Additional comments - Preparing the farrowing facility and farrowing pen
1.	Remove loose manure and feed remnants etc. with, for instance, a shovel. Subsequently thoroughly sprinkle pen partitions and floor, but do not let water run directly into the slurry pits. Plan soaking according to the work plan to ensure that the facility is soaked, washed and dry before sows are introduced. Dry cleaning, i.e. the pen is only scraped and swept, is not enough to significantly reduce the infection pressure.
2.	Remove all visible dirt during wash. Do not use a high-pressure cleaner for washing farrowing facilities that are not sectioned as that will negatively affect the environment of the other sows and piglets in the facility. You can protect the environment in the facility by using, for instance, a curtain between the rows of pens or by using a hose only. You can also clean the pens and apply dry cleaning afterwards. Discuss cleaning strategy and options with your pig advisor.
3.	Drying the facility after wash is in itself an efficient way of preventing transmission of disease between each batch of piglets.
4.	The pen is dry when the floor temperature is identical to the housing temperature. Place a piece of paper on the floor; if it shrinks/crumples within a couple of minutes, the floor is still wet. Alternatively, place a plastic folder on the floor; if the floor changes colours within a couple of minutes, it is not dry. If the facility is not dry, water will evaporate from the floor, and this will make the floor and pen partitions cold. It will also reduce ventilation, which will result in a poor climate in the facility. Drying is best done at 25°C, and requires approx. 0.3 litres of diesel oil to dry 1 m². The outdoor temperature greatly influences which method to choose for drying the facility: • Outdoor temperature <10°C: Add heat, for instance with a mobile oil burner that for 4-8 hours yields approx. 1 kW per farrowing pen. • Outdoor temperature 10-20°C: Additional heat is required if the air humidity outside is high, for instance during cloudy weather or rain. • Outdoor temperature >20°C: In most cases, it will be possible to dry the facility by setting the ventilation system to maximum performance until the floor and pen partitions have reached room temperature. It is extremely critical for the piglets if the floor in the farrowing pen is not dry. Newborn piglets have a lower critical temperature of 34°C, but will perceive a wet floor as being 24-29°C. Cooling also increases the risk of mastitis. Therefore, the pens must be completely dry before sows are introduced. The relative air humidity in the farrowing facility should be 50-70 %. You can check the air humidity with a wet/dry thermometer. The sum of temperature and air humidity must be 85-90.
5.	Insufficient water intake reduces the sows' feed intake. During lactation, sows need min. 35 litres and up to 50 litres of water a day. The pressure must be 2-2½ atm. when one fifth of the sows in the facility are drinking simultaneously. Check the output by drawing off water into a plastic bag or a measuring cup for 30 seconds and then measure the volume and multiply this by 2. To obtain a fair view, do this when the water system is being used, for instance around feeding, wash or water intake to the liquid feed system. A farrowing glove can be used to measure water output.
6.	If the pens along the outer walls are empty, there will be an uneven production of heat in the facility. Empty pens should therefore be distributed evenly across the middle of the room. <u>Never</u> leave pens under ventilation sensors empty. This applies to both diffuse ventilation and ventilation with air inlets.
7.	Nesting may shorten farrowing and reduce piglet mortality. The supply of straw or other nesting material in the week prior to farrowing is a statutory requirement.

H2 - Functional requirements to the farrowing pen



A farrowing pen with room for sow and piglets

Several requirements of sow and piglets must be fulfilled in the farrowing pen. The following requirements must be considered when renovating existing facilities or building new ones:

Sow

1. The sow must be able to stand and lie down in the crate - but not to turn around.
2. The sow must be able to get up and lie down without problems.
3. The volume of the trough must match the feeding strategy.

Piglets

4. The piglets must be able to suckle without obstacles; adequate space by the udder increases milk intake.
5. All piglets must be able to lie on the solid floor at the same time.
6. It must be possible to adapt the environment to newborn piglets and to 4-5-week-old piglets.

Pen

7. The design of the pen must fulfil the space requirements of both sow and piglets.



Very little space by the udder when the sow lies down with her back against the creep area

Inadequate room in the farrowing pen

- It may be difficult for the sow to lie laterally and thereby give the piglets access to the udder.
- The piglets are unable to suckle if, for instance, the sow lies with her back against the creep area.
- Not all piglets are able to lie down in the covered creep area and benefit from an optimum environment.

	Additional comments - Functional requirements to the farrowing pen
	The sow must be able to stand up and lie down, but not turn around, in a farrowing crate. The basis for calculating the space required is shown below.
1.	The dimensions of farrowing crates are based on the size of the sow. Recordings show that: • 95% of sows measure 200 cm in length • 95% of sows measure 47 cm in shoulder width • 95% of sows measure 71 cm from back to stomach
2.	The sow must be able to get up and lie down unhindered. As a general rule, the space required by the sow to get up and lie down is the sow's dimensions plus the space required for the movement. • A sow needs approx. 20 - 50 cm in length to get up and lie down • A sow needs approx. 20 - 40 cm in width for the movement of getting up-lying down. The sows in a herd are of different ages and thereby also of different sizes. On Danish production farms, first parity sows constitute approx. 20 - 25 %. The sows are fully grown by their fourth litter. These recommendations fit 95 % of Danish sows, but smaller sows generally take up less room when they get up and lie down. Recommendations for inside measurements (excl. space above the trough) are approx.: • Min. 210 cm in length • 65 - 90 cm in width. The width of the front of the crate and the back differs since the sow must not be able to turn around.
3.	It is essential that the trough be large enough for the sow's feed - also towards the end of lactation. The volume of a feed dose of approx. 11 FUsow a day is: • 12 l (liquid feed) or 5 l (dry feed), respectively, per feeding with 3 daily feedings. • 9 l (liquid feed) or 4 l (dry feed), respectively, per feeding with 4 daily feedings. • 7 l (liquid feed) or 3 l (dry feed), respectively, per feeding with 5 daily feedings. See H19 - Feeding of sows - Liquid feed.
4.	When there is space by the udder, research has shown milk letdown to last 25% longer per lactation, and the piglets are heavier at weaning. To ensure sufficient space for suckling, the width from the partition-side of the crate to the opposite pen wall must as a minimum measure the depth of the sow's body (approx. 70 cm) and to this must be added the length of the piglets' bodies. • Piglet length measures 56 cm (95 % of the piglets) at 4 wks and 58 cm at 5 wks. • Piglet shoulder width measures 13 cm at 4 wks and 15 cm at 5 wks.
5.	When piglets rest sternally, 15 4-week-old piglets take up approx. 1 m ² , i.e. approx. 0.07 m ² per pig.
6.	It should be possible to place the heat lamp in the cover of the creep area and a close-fitting lid must be available as replacement when the heat lamp is no longer being used. Otherwise there will be a draught in the creep area ("chimney effect").
7.	There must be room for the piglets to suckle regardless of which side the sow lies on. A "suckling width" of approx. 125 cm is therefore recommended on the basis of the sow's dimensions and the length of the piglets. A further 20 cm is recommended from the edge of the sow's space to the backwall and a further 30 - 40 cm for the trough. This results in a recommended pen width of 180 cm based on the most common pen design today with a creep area in the corner (90 cm creep area, 60 cm trough and 30 cm opposite the creep area). However, pen dimensions will depend on crate and pen design and should primarily be based on the factors listed in 1 - 4.

H3 - The environment of the sow

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H4 - Preparation for farrowing

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H5 - Supervision of farrowing



Newborn piglet found in due time

In due time, take care of sows and piglets that encounter problems.

1. Check for milk in the udder, swollen labia and mucus from the vagina as indications of impending farrowing.
2. Inspect the sow every $\frac{1}{2}$ hour, as a minimum, during farrowing.
3. Note the number of piglets born and the time of inspection.
4. There should be max. 1 hour between the first 3 piglets and max. $\frac{1}{2}$ hour between the next piglets. Perform obstetric aid if all piglets in the litter are dry and the sow seems to be expecting more piglets.
5. Help small or weak piglets get to the udder and ensure they start taking in colostrum. If necessary, place them under the heat lamp to warm them.
6. Assess whether the farrowing process is complete. If in doubt, examine the birth canal.
7. Examine the condition of the sow. Feel for hard mammary glands and observe the behaviour of the sow in terms of appetite and willingness to nurse.



Failure to detect a bad farrowing course

For the sow, inadequate supervision during farrowing means that

- A poor farrowing course is not recognized.
- The sow is weakened and will have difficulty starting the subsequent lactation.

For the piglets, inadequate supervision during farrowing means that

- Increasingly more piglets die from lack of oxygen.
- Weak piglets die as they get no colostrum and are cold.

	Additional comments - Supervision of farrowing	
1.	1-3 days prior to farrowing, the sow's vagina swells and becomes red. From 24 hrs before farrowing, you can milk clear liquid from the teats. When farrowing is approx. 12 hours away, colostrum can be milked from the teats, and clear mucus is observed in the vagina.	
2.	If no piglets have been born within the last hour, assess whether the litter is smaller than expected. If, at the same time, if only few placentas are observed or the sow is restless, perform obstetric aid (see H6 - Obstetric aid). Obstetric aid stresses the sow, and contractions will often be weak for the following hour, which delays farrowing. Therefore, only perform obstetric aid when a problem is suspected.	
3.	On the sow card, write the number of piglets at the time of inspection. At the next inspection, check if more piglets have been born. If necessary, note the time for each inspection. Use, for instance, an F disc or the LISA system from VengSystem A/S.	 The image shows a circular 'Farrowing Clock' titled 'F~Skiven'. It has three concentric rings: an outer blue ring labeled 'KLOKKEN' (Clock) with numbers 1-12, a middle green ring labeled 'LEVETIDSPUNKT' (Birth Time Point) with numbers 1-12, and an inner red ring labeled 'GODTIDSPUNKT' (Good Time Point) with numbers 1-12. Two hands are visible, one pointing to the outer ring and another to the inner ring.
4.	There must be no more than 1 hour between the first 3 piglets, and max. ½ hour between the next. If only dry piglets are observed at the inspection, the sow has not delivered piglets for the last ½ hour. A normal farrowing course lasts approx. 6 hours. This means that when litter size is low, a long time passes between the piglets, while at a high litter size, little time passes between the piglets. Generally, 10 minutes pass between the piglets, but there may be pauses of up to an hour. Pauses that long are often caused by the farrowing having stopped, and obstetric aid should be performed as the risk of stillborn piglets will otherwise increase. If many stillborn piglets are generally observed, night supervision is recommended.	
5.	It is difficult for small and weak piglets to get to the udder. They must be assured of colostrum. If necessary, warm them under the heat lamp or in an incubator. Cold and hunger destroys the intestinal surface of newborn piglets. Colostrum is ensured by expressing colostrum into the mouth of the piglet or by having a colostrum bank (see below).	
6.	When farrowing is complete, the sow will be calm and tend to the piglets, it will eat and you will see many placentas behind the sow (one per piglet). If in doubt, provide obstetric aid to help the sow deliver retained placentas (see H6 - Obstetric aid).	
7.	Farrowing is hard on the sow. If the sow is sick after farrowing, it must be treated to ensure that both sow and piglets survive.	

Expressing colostrum for weak piglets:	
You can express the milk into the mouth of the piglet.	
You can express the milk into a cup. Pick a calm sow that is farrowing or has just farrowed. Use your hand as you would when milking a cow by hand. Subsequently, give colostrum to weak piglets using, for instance, a disposable syringe. 10 ml colostrum is enough to assure a small piglet of antibodies, but it must subsequently be assured of enough colostrum or milk to survive the first 24 hrs – typically a piglet weighing 800 g requires 150 g milk to survive the first 24 hrs.	

H6 - Obstetric aid



Obstetric aid performed at the right time



Obstetric snare

Obstetric aid ensures prompt intervention, which saves both the sow, the piglet stuck and the piglets yet to be delivered:

1. Only perform obstetric aid if it is necessary.
2. There must be no pen partition/equipment between your arm and the sow. The sow must not be able to inflict injury to the arm by lying down.
3. Wash the sow's genital opening with soap and lukewarm water.
4. Squat behind the sow, put on a glove and gel on the arm.
5. Only put the gel on the top of your hand – it will even out as you move your hand into the sow.
6. Do not touch anything with the glove and lead your hand into the sow's vagina.
7. Grab pigs born head first by the neck or lower jaw.
8. Grab pigs born tail first by both hind legs. One hind leg between index finger and long finger, one hind leg between long finger and ring finger.
9. Pull out the piglets in an even pull.
10. Swing the piglets back and forth once to empty their respiratory tracts.
11. If the sow is standing, place the piglets in safety in the creep area.
12. If the sow is lying down, place the piglets by the udder.
13. Pull out all the piglets that can be reached.
14. Following obstetric aid, the sow needs to rest for an hour. If no more piglets are born within ½ hour, re-examine the sow.



Inadequate farrowing course – failure to provide obstetric aid

Examples of inadequate farrowing courses:

No contractions

- Perform obstetric aid.
- Pull out as many piglets as possible.
- Re-examine the sow after ½ hour if no more piglets have been born.

Piglet is blocking the birth canal

- Perform obstetric aid.
- Pull out as many piglets as possible.
- Re-examine the sow after an hour.

Piglet is lying in incorrect position

- Perform obstetric aid.
- Push the piglet inwards.
- Take hold of the piglet's head or hind legs and pull out the piglet.

	Additional comments - Obstetric aid
1.	Only perform obstetric aid if it is believed to be necessary (see H5 - Supervision of farrowing). Obstetric aid damages the uterus mucosa and introduces bacteria into the uterus. Sows receiving obstetric aid have an increased risk of subsequently contracting metritis, which will affect the sow's well-being, milk yield and fertility. A high level of hygiene is therefore essential to the health of the sow.
2.	Make sure that you are able to perform obstetric aid without first having to open pen sides or move buckets or bottles. If the sow is standing up, and you lean your arm across the pen partition and into the vagina, you may hurt your arm if the sow suddenly lies down.
3.	Wash the sow's genital opening with soap and lukewarm water to avoid introducing faeces into the uterus.
4.	Wear a glove to avoid allergic reactions to uterus fluid. Artificial uterus mucus protects the uterus mucosa against damage and swelling. This also reduces the risk of metritis. Use the other hand for handling the piglets that have been delivered. Change gloves if the glove touches anything other than the birth canal and the newborn piglets.
5.	You risk introducing bacteria into the uterus, which may lead to infection. The greatest risks are touching the pen equipment, the sow's back of the floor with the glove before you perform obstetric aid. Apply gel on top of your hand and do not use the other (dirty) hand to smooth it into an even layer.
7.	Grab piglets born head first by their neck. If this is not possible, take hold of the lower jaw of the piglets. If this is also impossible, take hold of one front leg between index finger and long finger, and one front leg between long finger and ring finger. Use a tool if this is impossible (see below).
8.	Grab piglets born tail first by both hind legs: One hind leg between index finger and long finger, one hind leg between long finger and ring finger.
9.	Pull the piglets out in an even pull to be in control of how much force is used otherwise the sow might get hurt.
10.	Piglets born during obstetric aid often have mucus in their lungs. With the hand that was not used for obstetric aid, take hold of the piglet by its hind legs and swing it back and forth once to clear out the mucus.
11.	Piglets born during obstetric aid are often weak. If the sow is standing, there is a risk that it will lie down on the piglets. It is therefore better if the piglets are placed in the creep area where they are warm and safe.
12.	If the sow is lying down, place the piglet you pulled out by the sow's udder. Move litter mates so that the piglet can get to a teat.
13.	Obstetric aid is complete when all the piglets that could be reached are pulled out.
14.	Obstetric aid will stress the sow, which causes the contractions to stop for the next hour. Examine the sow an hour after having performed obstetric aid. If piglets are felt inside the sow that cannot be reached, examine the sow once more 30 minutes later.

Tools: It may be impossible to get a proper hold of a piglet during obstetric aid. Therefore, always have a clean tool ready for obstetric aid in the farrowing facility:

- An **obstetric snare** is a pipe with a string. The pipe directs the string to the piglet. Place the string behind the piglet's head, lower jaw or around the hind legs to get a good hold of the piglet.

H7 – Råmælksforsyning til alle grise samt brug af mindste-amme

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H8 – Kuldudjævning og ammesøer

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H11 - Exchange of litters



Successful exchange of an entire litter with reduced growth

A litter of vigorous piglets can start lactation of a sow that has stopped.

1. If an entire litter is showing signs of reduced growth, move them to a sow with a good milking capacity.
2. The sow receiving the litter must have nursed large, uniform piglets.
3. The sow receiving the litter should be a young sow.
4. Exchange litters directly, i.e. make sure that neither sow is without piglets at any time.
5. The sows exchanging litters must have an equal number of piglets.
6. After the exchange, pay special attention to the litter with reduced growth, for instance install a heat lamp.
7. Do not adjust the feed dose of the sows in connection with the exchange of litters.



This litter was moved too late, and the piglets are too weak to manage, which will increase mortality

Exchange failed if

- The exchange took place too late, and the piglets with reduced growth are too weak to nurse.
- The sow whose litter had reduced growth has become sick.
- Piglets in the litter with reduced growth have become sick.
- The sow lies sternally much of the time or stands up a lot so that the piglets are kept from nursing.
- The piglets are agitated - possibly because the sow refuses to let them nurse.

	Additional comments - Exchange of litters
	Before exchanging litters, make sure that all other conditions are in order (see, for instance, H14 - Supervision of the farrowing facility; H15 - Disease and treatment of sows; and H16 - Disease and treatment of piglets).
1.	Often, exchange of litters is only necessary in the first or second week after farrowing. Two litters are exchanged when the entire litter/the majority of the litter is suffering from reduced growth. If only few piglets in a litter suffer from reduced growth, see H12 - Foster sow for piglets with reduced growth.
2.	It is essential that the sow given the litter with reduced growth has a high milk yield so that the weak piglets are offered milk quickly. Consequently, the large uniform piglets that are moved to the sow with reduced milk yield start nursing quickly and thereby stimulate the milk production of the sow.
3.	Young sows are quick to accept a new litter.
4.	Time is essential as piglets with reduced growth cannot manage further setbacks. Check that they start nursing as they are not always strong enough to stimulate the new sow to a high milk yield.
5.	The entire litter is moved - the piglets will then not have to form a new hierarchy. It is therefore important that the two sows exchanging litters have an equal number of functional teats.
6.	It is vital that the piglets have an optimum environment. See H13 - The environment of the piglets; H23 - Feeding of piglets.
7.	Do not reduce the feed dose of the two sows exchanging litters on the day of the exchange. Keep an eye on the feed intake of the sows - especially the first two days after the exchange. If the sow that gave up the litter with reduced growth fails to start lactating, it may be necessary to move the litter to a foster sow. See H12 - Foster sow for piglets with reduced growth.

H12 - Foster sow for piglets with reduced growth



Hungry piglet that should be moved to a foster sow

It is inevitable that some piglets do not grow as well as the rest of the litter. You may benefit from moving these pigs to a foster sow.

1. A foster sow rears piglets that cannot manage in their own litter.
2. A foster sow is a well-functioning sow that has weaned uniform thriving piglets that have been moved to the weaner facility.
3. A foster sow may be a sow about to be culled.
4. Reduce the feed dose of the foster sow by 2 FUsow.
5. Move the piglets to a foster sow before they stop thriving completely.
6. Make sure that the foster sow accepts the piglets.
7. Do not use a foster sow for small, but healthy, piglets.



Sick piglet that should not be moved

Do not move

- A sick piglet as it will infect other piglets. Instead, treat the piglet and provide colostrum.
- Healthy piglets if they are small, but still thriving. That disturbs the teat order in the litter they are moved from and in the litter they are moved to.
- A piglet to yet another foster sow if the piglet is not ready to be weaned at the same time as the other piglets of the foster sow.

	Additional comments - Foster sow for piglets with reduced growth
1.	Work systematically when you prepare a foster sow. Place a clothes-peg on the sow cards where piglets are showing signs of reduced growth. Make the foster sow when the number of clothes-pegs corresponding to the number of piglets it can manage have been used. Pay close attention to piglets with reduced growth to make sure the foster sow is made in time.
2.	A foster sow must be healthy, have an appropriate body condition score, no shoulder lesions and no leg injuries.
3.	A foster sow can also be a sow in appropriate body condition about to be culled. A foster sow may come on heat in the farrowing facility and this will not impact batch management if the foster sow is about to be culled. In terms of productivity, it is an advantage to use young sows as nurse sows, and there will therefore rarely be enough young sows to be able to use them as foster sows also.
4.	Reduce the sow's feed dose by 2 feed units to prevent the sow from coming on heat and from stopping eating. Pay close attention to the feed intake of the foster sow and examine for mastitis the first days after making the foster litter.
5.	Starvation is often the cause of reduced growth among piglets, and the foster sow must therefore be made quickly, particularly in the first week after farrowing. After the first week, disease or malfunctioning teats are the main causes for moving piglets to a foster sow.
6.	If the piglets are agitated, and the sow stands up or lies sternally repeatedly after 24 hours, it could be that the foster sow has not accepted the litter. It is also a possibility that the foster sow has stopped. Consider exchanging litters. See H11 - Exchange of litters.
7.	The piglets in a litter may be of different sizes. Do not move the piglets if they thrive and grow in the original litter, but are just smaller than the rest of the litter.

H13 - The environment of the piglets



Good environment shortly after farrowing



Environment towards the end of lactation

Check the environment in the creep area before 8:30. The environment is optimum if

1. The piglets lie together, in one layer, and fill the creep area from the back.
2. It is dry.
3. It is draught-free.
4. There is room for all the piglets in the creep area.
5. The below temperature strategy is applied to optimise the environment of the piglets.

Day	0 - 4	4 - 14	14 - wea.
Temperature on creep floor, °C	34 - 36	32 - 34	30
Inlet temp., floor heat, °C	40 - 42	Approx. 40	30 - 35
Heat lamp (100 Watt bulb)	+	Turn off day 3 - 5	÷



The environment is too cold



The piglets do not need the heat lamp

The creep area is too cold if

- The piglets huddle together. Check the floor heat and check whether the heat lamp was turned off too soon. Also check for draught/chimney effect if the heat lamp is placed in the roof of the creep area.

The creep area is too hot if

- The piglets do not lie under the heat lamp that is turned on.
 - **Day 0-5** It is too hot under the lamp - check the effect of the lamp (100 Watt) and the distance to the floor (50 cm).
 - **Day 5-** The piglets no longer need the lamp.
- The piglets do not lie from the back wall of the creep area or if they lie outside the creep area, check floor heat (reduce inlet temperature) and if necessary turn off the heat lamp.

	Additional comments - The environment of the piglets
	Always assess the environment before 8:30 in the morning as the night time is the most critical time. Sow and piglets have very different requirements to the environment. The sow's requirements must be met by the climate in the facility, and the piglets need to have their requirements fulfilled in the creep area. Switch on heat lamps in farrowing pens in which the sows are expected to farrow during the coming night. Often, approx. one day passes after farrowing before the piglets adapt to the creep area. A high indoor temperature (approx. 22°C) is therefore necessary the first day in sectioned management.
1.	Intervention is required if the piglets do not lie in one layer from the back of the creep area. If the piglets have trouble staying warm early in the suckling period, increase the temperature in the creep area by covering part of the entrance of the creep area with a board. It is essential that the hole in the board is large enough for all the piglets to get in and out of the creep area without problems (min. 20 cm high and 15 cm wide).
2.	A wet floor in the creep area is highly critical for the piglets as a wet floor is 5 - 10°C colder than a dry floor. A wet floor in the creep area may be caused by: • Inadequate drying of the floor before transfer of piglets. • Diarrhoea among the piglets. • The temperature in immediate environment is too high. • The sow is playing with the water.
3.	The covered creep area must be located in the warmest place in the pen. Piglets will feel a draught if cold air flows into the warm creep area. A draught typically arises from leakages in the creep area, especially around: • The hole for the lamp, when the lamp has been removed and a roof is missing (chimney effect). • Leaky joints between the back wall and the side wall or the roof of the creep area. • Defect or no edge bent downwards. If there are leakages in the creep area or if the back wall is cold, mess may occur in the creep.
4.	When piglets are four weeks old, they take up approx. three times as much room as they do when they are born. Towards the end of the suckling period, when the room temperature is below 20°C, there must be room for all the piglets in the creep area.
5.	The temperatures are guiding - always adjust on the basis of the behaviour of the piglets. Newborn piglets have a temperature requirement of 34 - 36°C; a temperature lower than this will lower the body temperature of the newborn piglets. Experience shows that after approx. two hours on a cold floor, piglets' body temperature drops, and the risk of disease increases significantly. Inlet and reflux temperatures can be recorded with an infrared thermometer. The difference must not be more than 2-3°C. Inspect the circulating pump if the difference is greater. A greater difference can also be caused by cooling of the water at some point in the circulation. For instance, if there is a great loss of heat due to a wet floor. Heat may also be lost to the inspection alley from pens turning sideways. Large differences in temperature can also be felt by holding with one hand on the inlet pipe and the other hand on the reflux pipe. In farrowing pens facing sideways, there is a greater heat loss in the creep area than in pens facing backwards. It may therefore be necessary to have a higher inlet temperature or use a bulb with a larger effect in the heat lamp. In pens with fully slatted floor with heat plates, the inlet temperature should be 37 - 38°C. The temperature strategy for a facility with fully slatted floor is shown in H3 - The environment of the sow. In periods with large fluctuations in temperatures between day and night: • Unchanged strategy, in case of diffuse ventilation and the creep area has a roof. • It may be necessary to increase the temperature in the facility by 1 - 3°C to avoid a draught in these periods if you use ventilation with air inlets.

H14 - Supervision of the farrowing facility - of sows, piglets, facility and pen



Staff member inspecting piglets in a farrowing pen

Inspect all farrowing pens every day.

Before inspecting each individual pen, note the climate (warm/cold/draught). Do not step into the pen if all pigs are up and walking.

1. Stand in front of the farrowing pen and form a general impression of the piglets' lying behaviour and the sow's behaviour.
2. Assess the sow's health.
3. Check feed and water supply for sows and piglets.
4. Check the environment of the creep area.
5. Lift the roof off the creep area.
6. Make all piglets stand up.
7. Assess the health of the piglets and initiate treatment if necessary.
8. Decide what to do with piglets that are not thriving.
9. Check whether the farrowing crate needs adjustment.



Piglets that should have been treated

Inadequate inspection in the farrowing facility may result in

- An increase in piglet mortality due to arthritis or other disease.
- An increase in dead and non-uniform piglets due to failure to move piglets with reduced growth in time.
- Insufficient knowledge of where and when to intervene against sick and weak piglets.
- Sick sows not being treated.

	Additional comments - Supervision of the farrowing facility
	It is important to inspect all piglets every day. Start with the youngest piglets to avoid transmitting infection to the older piglets. 0-7-day old piglets can quickly fall behind, and they must be moved within ½-1 day to survive. The remaining days up to weaning are also important. A piglet with an acute disease must be treated in time and a piglet with incipient arthritis can only be cured if treated in the early stages.
1.	The first impression of the situation in the pen is often fairly accurate. Non-uniform piglets, piglets searching by the sow's udder, piglets "huddling together" or sows lying sternally are among the indications that something is wrong.
2.	Examine the sows for reddening on the udder, leg problems, scapula, shoulder lesions, body condition etc. and initiate treatment if necessary. See H25 - Prevention and handling of shoulder lesions and H15 - Disease and treatment of sows.
3.	Every day, check if the piglets' trough is empty. Adjust the feed dose - see H23 - Feeding of piglets. Also check the function of the sow's feeder.
4.	Observe the pen without disturbing the piglets. The piglets must lie in one layer.
5.	If there are piglets that do not get up at the time of the inspection, make them stand up and examine them. Inspection is considerably easier using a central opening device in several creep areas at a time. Check that the creep area is dry and warm. Also check if there is a draught in the pen. See H13 - The environment of the piglets
6.	Even though the piglets lie in one layer under the cover in the creep area and look healthy, it is still important to make all piglets stand up and walk around to see if they have leg problems etc. and to treat them. Remember: When the piglets lie down, you can see them, but you cannot see if anything is wrong with them.
7.	If piglet mortality rates are high, record causes of death for a period of time. When a piglet has received the recommended number of treatments and does not seem to be responding to the treatment, assess whether to continue the treatment or whether to destroy the piglet (see also H16 - Disease and treatment of piglets).
8.	Piglets that are sharp across the back and hollow around the flanks eat too little and should be moved to a foster sow as quickly as possible. See H12 - Foster sow for piglets with reduced growth. If the sow has stopped, i.e. an entire litter is not growing, find another sow with the same number of viable piglets, and let the two litters switch sows. Thereby the "weak" piglets are placed with a sow that is doing well, and the viable piglets are placed with a sow that has stopped. This may help stimulate the sow that had stopped. See H11 - Exchange of litters.
9.	Widen the sides of the crate as soon as the piglets are mobile (3-5 days). Sufficient space by the udder during suckling increases milk letdown by 25%.

H15 - Disease and treatment of sows



A healthy sow being examined

A healthy sow

1. Has a sound appetite.
2. Has no signs of flux.
3. Has mammary glands that are not hard or red.
4. Has a normal temperature.
5. Gets up and lies down without problems.
6. Produces enough milk.
7. Urinates clear or light yellow urine.

Examine the sows daily, particularly the first 4 days after farrowing.



This sow is sick - it has not eaten, and the piglets are cold and get no milk

Observe the sow thoroughly at least once a day 25-35 minutes after feeding. It may be sick if

- It does not get up.
- It is lying sternally.
- It has not eaten all its feed.
- It fails to support evenly on all four legs.
- The piglets are agitated.
- The piglets do not grow.
- The piglets suffer from diarrhoea.



This sow excretes vast amounts of flux from the uterus

	Additional comments - Disease and treatment of sows
	It is important to check daily that the sow is healthy or whether it needs treatment of some kind. Farrowing puts a great strain on the sow; the most common disorder post-farrowing is M.M.A., which is triggered by infection in the uterus or the udder.
1.	If a sow does not eat as expected, it may be unwell, but it can also indicate imminent weight loss if the sow continues not to eat all its feed. The sow should have eaten up 25 minutes after feeding. If it does not eat up, check the water supply. See H1 - Preparing the farrowing facility and farrowing pens. Check the adjustment of the feed box and the composition of the feed. Consult your feed advisor in such cases. Lack of appetite may be an indication of constipation.
2.	Flux is often seen on the rear part and tail of the sow or on the floor. Flux is an indication of infection in the uterus or vagina. However, note that brownish, white or clear flux (without pus) is normal for the first 48 hours. Treatment must take place according to the instructions from the herd vet.
3.	Hard mammary glands, reddish udder or spots on the udder indicate incipient mastitis. Treat infections according to instructions from the vet. Treatment for mastitis should be supplemented with pain relief. If all mammary glands are equally hard, the problem is probably oedemas caused by accumulation of fluid in the udder tissue. Antibiotics will have no effect whereas pain relief may help the sow. Pain relief increases the well-being of the sow and increases the chances of allowing the piglets nurse.
4.	If the sow's temperature is above 40°C on the day of farrowing and above 39.5°C the remaining days, it has a fever and should be treated according to the vet's instructions. Treatment should include pain relief. It is essential to establish the cause of the fever. The drawback of treating with antibiotics is that they are excreted with the sow milk and will thereby destroy the bacteria balance in the piglets' intestines. This increases the risk of diarrhoea among the piglets.
5.	If the sow does not get up, help the sow to get up and check if it supports evenly on all four legs. Examine the sow for leg and hoof injuries and treat according to the vet's instructions - including pain relief. Inspect pen conditions. Does the crate need adjustment, is the floor slippery? Incorrect leg position and tenderness: Relieve a sow with leg injuries by placing a rubber mat on the floor, moving the sow to a farrowing pen with deep litter or to a hospital pen. In case of swellings or if the sow does not support on all four legs, distinguish between fractures (destruction), sprains (pain relief and relief) and infection (antibiotic treatment, pain relief and relief).
6.	If the piglets are agitated or do not thrive, it may be an indication that the sow does not produce enough milk.
7.	If a sow drinks too little, the urine turns dark. Compare urine from the sows when they get up in the morning. Pay special attention to sows that do not urinate as they are the sows that drink the least. Urine must not contain blood, pus or other impurities. Pus or impurities are often found on the pen floor in small lumps as they have been excreted with the urine. Impurities in the urine indicate infections in the urinary tract. Check the sow's water supply - H1 - Preparing the farrowing facility and farrowing pens.

H16 - Disease and treatment of piglets



Treatment of a piglet

A healthy piglet

1. Is round and has a smooth and shining coat of hair.
2. Has normal faeces.
3. Holds its head and ears normally.
4. Has untroubled breathing.
5. Is not lame.
6. Lies normally in the creep area.
7. Comes to the teat when lactation is initiated.

It is important to inspect the piglets daily and this is particularly important in the first week after farrowing, as immediate intervention will save lives.



Piglets that were not treated

Piglets may be sick if

- They do not come to the udder.
- They isolate themselves from their litter mates.
- They have spiky fur.
- They walk with their head tilted.
- Their ears point backwards.
- They are lame.
- Diarrhoea is observed in the pen or on the piglets.

	Additional comments - Disease and treatment of piglets
	During the daily supervision of the piglets, it is important to assess whether to treat or destroy a sick pig. If a pig is still sick after the recommended treatment, re-assess whether further treatment is likely to cure the piglet. If not, destroy the piglet. Piglets suffering from paralysis or a broken leg should be killed immediately. Sick piglets need a warm environment and easy access to water.
1.	A piglet with spiky hair or greasy skin is sick and it may be weakened by hunger. Treat the piglet if it is sick. A pale piglet may be deficient in iron or be sick. Check the strategy for supplying iron - is the need of all piglets covered? See H17 - Iron, castration, tail docking and tooth grinding.
2.	If you observe diarrhoea in a pen, check if only one piglet is sick or the entire litter is affected. If all piglets are sick, the sow may not provide enough milk or the temperature of their environment may be too low. Do not move sick piglets and do not walk directly from one pen with diarrhoea into other pens as diarrhoea is highly contagious. Piglets suffering from diarrhoea need a lot of fluid quickly; provide extra water and possibly an electrolyte solution or A38. See H23 - Feeding of piglets. Treat the piglets according to the instructions of the herd vet.
3.	A piglet that hangs its head probably suffers from cerebrospinal meningitis or otitis media. Both infections can be treated with antibiotics and, if necessary, pain relief. A swollen ear may be an ear haematoma, which is caused by a burst vein and cannot be treated.
4.	A normal breathing is calm, untroubled and has no murmurs.
5.	If a piglet is lame, it may suffer from arthritis, a hoof abscess or it may have been crushed or stepped on. Arthritis and hoof abscesses are treated according to the instructions of the herd vet.
6.	If a piglet does not lie normally in the creep area, it may be sick. However, the creep area may also be too warm or too cold. See H13 - The environment of the piglets.
7.	If a piglet does not come to the teat when the sow lactates, it may be sick or there may not be sufficient room by the udder, or the piglet may simply not be hungry. See H2 - Functional requirements to the farrowing pen.
	Once a sick piglet has been located and treated during your inspection of the pens, it is important to be able to easily identify the piglet for treatment the following day, for instance by marking it with a colour spray. Different colour codes or different places for a coloured line on the piglet can be used for identifying different types of medication or disorders. Put a clothes-peg on the sow card / gate of the pen, so that a certain location of a clothes-peg signals treatment of a piglet the following day. Remove the clothes-peg when treatment is complete.

H17 - Iron, castration, tail docking and tooth polishing

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H18 - Milk yield

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H21 - Individual adjustment of a sow's feed dose after farrowing

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H22 - Texture of feed for lactating sows

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H23 - Feeding of piglets

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H24 - Weaning



Piglets ready for weaning

Successful weaning requires thorough preparation.

1. Start preparing the day before weaning.
2. Decide on the number of farrowing pens needed for the next batch.
3. Identify the litters / sows to be weaned, count them and note this information on the management list.
4. Mark the sows selected for weaning so that they are easy to find.
5. Mark the sows to be culled after weaning with an S / SL for slaughter.
6. Mark nurse sows with an A so that they can be observed thoroughly in the service facility.
7. If required prepare foster sows for the piglets not ready for weaning.
8. Prepare inspection alleys, driving boards, etc.
9. Each staff member must be fully aware of his/her tasks in connection with weaning.

Weaning:

10. Move the sows to the service facility.
11. Drive the piglets out of the pen.
12. Do not stress the pigs - use a driving board.
13. If necessary, move a few sows.
14. Do not cool the piglets during transport.



Weaning was not prepared and the piglets are too non-uniform

Insufficient preparation for weaning may result in

- Failure to identify sows that need to be weaned before time.
- Non-uniform piglets at weaning.
- Too little time to select the right sows and piglets

	Additional comments - Weaning
1.	Weaning becomes a lot less stressful for pigs as well as humans if the procedure is thoroughly prepared. There is plenty to do as it is on the day of weaning.
2.	Print the most recent management list to form a general idea of the number of farrowing pens needed for the next farrowing batch.
3.	Piglet performance post-weaning is more affected by age than weight, which is why you should focus on weaning the oldest piglets rather than the biggest piglets. Also assess the well-being of the sow - it may be necessary to wean the sow if it appears to be having problems.
4.	It will be easier to find the sows to be weaned the next morning if you remove the sow card, reverse it in the plastic folder or mark the sow with a spray.
5.	Check retention time for treated sows ready to be culled.
6.	Pay special attention to nurse sows in the service facility as there is a risk of them coming on heat together with the rest of the batch.
7.	In terms of on-farm biosecurity, it is best to wean all piglets, but piglets that are too small, sick or weak to be weaned can be moved to a foster sow and weaned with the next batch.
8.	Make sure doors and gates are open / closed as required, the alleys are not slippery and that there is no feed on the floor.
9.	To have the best possible flow during weaning, it is essential that all staff members are aware of their role so that they know exactly what to do.
Weaning	
10.	Make sure that feed is ready for the sows in the service facility.
11.	Drive the piglets in inspection alleys or move them in carts. Litterwise weaning may help reduce the infection pressure in the weaning facilities.
13.	In farrowing facilities with continuous operation, it will often be necessary to move a few sows around to make the batches match. This should not be necessary in sectioned operation.
14.	If the weaned piglets are transported outdoor, it is important to use well-bedded, warm trucks (preferably heated).

H25 - Prevention and handling of shoulder lesions

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H26 - Communication between the farrowing facility and other sections



Every week is planned. Various topics are discussed: events that need consideration or problems that can be prevented

For optimum production results and job satisfaction among your staff, the work in all facilities of the production must be co-ordinated.

The staff in the farrowing facility must receive information on:

1. Number of sows arriving from the gestation facility?
2. How many will need rubber mats?
3. How many are coming directly from a hospital pen?

The staff in the farrowing facility must provide information on:

4. Number of sows weaned for the service facility or to be culled.
5. Sows with possible problems, such as
 - No appetite in the farrowing facility.
 - Sows that came on heat in the farrowing facility.
6. Number of piglets weaned.
7. Diseases among the piglets.



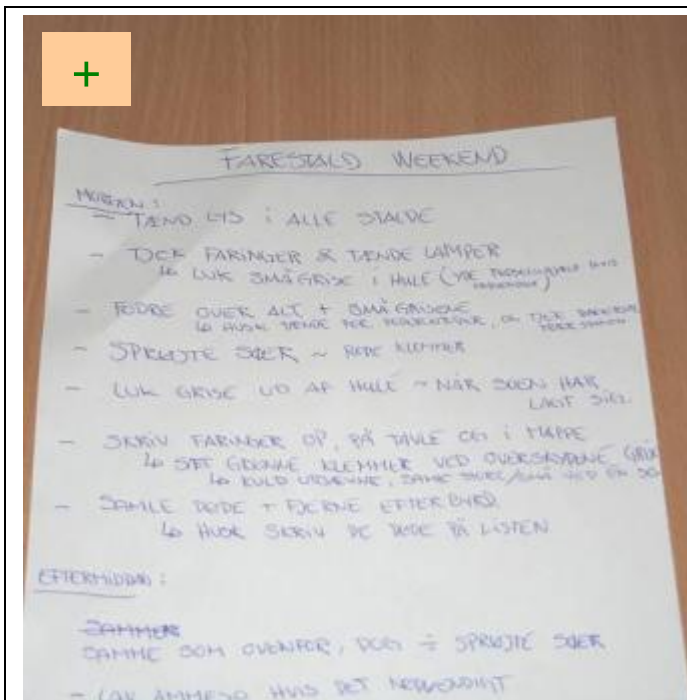
Sow with a poor udder. This sow should be culled

Consequences of inadequate co-ordination:

- Poor working environment - no placing of responsibility.
- Low production results.
- Large variations in results.
- Poor utilisation of the facility.
- Poor exploitation of the sows' production potential.
- Unfinished or incorrectly performed tasks.
- The same tasks may be done more than once.

	Additional comments - Communication between the farrowing facility and other sections
1.	It is important for the staff to know how many sows arrive from the gestation facility to get an idea of how many sows will be weaned. The sow's journal should accompany the sow into the farrowing pen. Transfer the sows to the farrowing facility according to date of service as this will ease the logistics.
2.	Provide sows with an increased risk of shoulder lesions with a mat when they are transferred to the farrowing facility.
3.	Pay special attention to sows coming directly from a hospital pen to the farrowing facility.
4.	Easy management of the service facility requires information on the number of sows to be weaned in each batch. This includes information on nurse sows that may not come on heat at the same time as the other sows and information on which sows are to be culled.
5.	Sows with problems may be sows that were weaned earlier than expected; that had problems with their appetite in the farrowing facility; or sows that came on heat in the farrowing facility.
6.	The staff in the weaner facility will need to know how many piglets are weaned.
7.	Pay special attention and supply extra heat to sick and weak piglets in the weaner facility.

H27 - Weekend / holiday replacement in the farrowing facility



Detailed weekend plan

When a person other than the one normally responsible tends to the farrowing facility, much information must communicated:

1. Prepare a detailed work plan that outlines the tasks in the farrowing facility.
2. Give a thorough introduction to the work in the farrowing facility immediately before a weekend/holiday replacement.
3. Make a follow-up after the weekend/holiday with the person responsible for the farrowing facility.
4. Decide who is responsible for the communication/completion of the information/follow-up.

Inadequate agreements may result in:

- Poor and varying production results depending on who tends to the facility during weekends and holidays.
- Tasks not being done or being done incorrectly.
- Misunderstandings and disagreements between staff members.
- Unfulfilled expectations from the person in charge of the facility.

	Additional comments - Weekend / holiday replacement in the farrowing facility
	For approx. 1/3 of the year, employees other than the person responsible will tend to the facility (weekend rota system, holidays, national holidays and absence due to sickness) in a facility with three employees. Misunderstandings and different work routines may lead to highly varying production results in the farrowing facility.
1.	All employees in the farrowing facility should make a plan together of the tasks that need to be done in the facility over the weekend or during holidays or in case of disease (week plan). Examples of tasks in the farrowing facility: 1. Obstetric aid 2. Empty troughs before feeding. 3. Feeding of sows 4. Adjust feed dose. 5. Treat sick sows and piglets. 6. Crossfostering. 7. Move excess piglets to a nurse sow. 8. Feed piglets. 9. Remove placenta + dead piglets. 10. Check temperature in facility (see checklist).
2.	Before the start of a weekend / holiday, the person responsible draws up a schedule in which is written: • Sows/litters that need special attention during the weekend (for instance, a nurse sow just made, sick sows etc.). • Selection of nurse sows, intermediate nurse sows and foster sows, and notes of where in the facility they are and how many piglets they are able to rear. • Sows that have just farrowed or are farrowing. • Sows that have 1-2 piglets too many that must be moved no later than the day after, but where there was not enough room to move them before the weekend. • Technical details to be checked (for instance, problems with a specific feed box). • Treatments for disease (check treatment file). • Have some sows had their feed dose significantly reduced? Which feed valves need extra attention? Before the weekend, the weekend replacement and the person responsible for the farrowing facility go through the schedule together and take a walk through the farrowing facility.
3.	When the weekend is over and the person responsible is back at work, he/she and the replacement go over what happened during the weekend or the holiday (for instance, problems with farrowings or sick sows, sows with too few piglets, many dead piglets, etc.).
4.	It is important beforehand to be specific about who is responsible for initiating both the handover of tasks and the follow-up.

H29 - Essential statutory requirements to the farrowing facility



Out of regard to the welfare of the animals, the reputation of the pig production industry and as preparation for welfare inspections, all staff members must be familiar with important statutory requirements in relation to the farrowing facility.

1. **Space:** No specific space requirements for the farrowing facility [2].
2. **Light and vision:** Pigs must be kept in min. 40 lux for minimum eight hours a day. Generally, pigs must be able to see other pigs. However, exceptions exist around farrowing [2] [6].
3. **Flooring:** All piglets must be able to rest simultaneously on, for instance, a solid floor [2].
4. **Protection of piglets:** Farrowing pens for loose sows must have a protection device for piglets [2].
5. **Water:** All pigs older than two weeks must have permanent access to fresh water [2].
6. **Nesting material:** Sows and gilts must have access to nesting material in the week up to farrowing [2].
7. **Rooting and enrichment material:** All sows and piglet must have permanent access to a sufficient amount of manipulable material. Piglets must have permanent access to manipulable material [2] [3].
8. **Tooth grinding:** Routine tooth grinding is prohibited. If necessary, tooth grinding must take place within the first four days of life [2].
9. **Tail docking:** Routine tail docking is prohibited. Preventive measures must be taken to solve tail biting problems. If necessary, tail docking must be done within the first 2-4 days of life. Dock as little as possible, and no more than half of the tail [4].
10. **Castration:** Castration must be performed under pain relief [8] within the first 2-4 days of life. It is **illegal** to tear tissue apart [4]. According to the voluntary DANISH scheme, local anaesthetics must be administered to pigs before castration.
11. **Weaning age:** Piglets must not be weaned before they are min. 28 days old [2].
12. **Destruction:** Piglets below 5 kg can be destroyed by smashing its head and neck into the floor causing immediate death due to skull fracture [9]. Pigs above 5 kg must be euthanize (killed) with a captive bolt pistol, unless destruction is performed by a vet, butcher, people with a game licence or other people trained in slaughter or destruction. All animals that are stunned (for instance with a captive bolt pistol) must be bled by breaking through at least one of the two carotid arteries or through blood vessels coming from this [5].
13. **Time of transfer:** Gestating sows and gilts must be transferred to the farrowing pen min. 3 days before expected farrowing.
14. **Zinc:** Feed containing more than 150 mg zinc per kg feed must not be used in the farrowing facility [7].

Legislation

[2] Order on protection of pigs. BEK no. 323 of May 6 2003

[3] Act on amending act on indoor keeping of gestating sows and gilts and act on indoor keeping of weaners, breeding stock and finishers. Act no. 295 of May 30 2003

[4] Order on tail docking and castration of animals. BEK no. 324 of May 6 2003

[5] Order on slaughter and destruction of animals. BEK no. 1037 of December 14 1994

[6] Order on amending order on protection of pigs. BEK no. 1735 of December 22 2006

[7] Brief no. 0521, The National Committee for Pig Production.

[8] Order on amending order on tail docking and castration of animals. BEK no. 1471 of December 12, 2010.

[9] Declaration from animal protection committee, November 18, 1998.

	Additional comments - Essential statutory requirements to the farrowing facility
1.	All pig facilities must be large enough all pigs to be able lie down, rest and get up without difficulty (§ 12). Farrowing pens must have an unobstructed area behind the sow/gilt to ease natural farrowing or farrowing which requires assistance (§ 27). In farrowing crates, the piglets must have sufficient room to suckle without difficulty (§ 31). [2]
2.	Pigs must be kept with a light intensity of minimum 40 lux a day for a period of minimum eight hours a day (§ 8) [2], [6]. As a point of departure, all pigs must be able to see other pigs (§ 12, 3), but in the week before expected farrowing and during farrowing, gestating sows and gilts can be kept out of sight from other pigs (§ 25). [2]
4.	Part of the total floor area in a farrowing pen must be large enough for all piglets to be able to rest. There should also be solid floor covered by a mat or bedded with straw or other suitable material (§ 30) [2].
5.	Pig rails may function as a protection device for the piglets (§ 28) to reduce the risk of injury when the sow lies down [2].
6.	§ 19, BEK 323 [2].
7.	This has been a legislative requirement since May 15, 2003, and applies to all farrowing facilities - regardless of when they were taken into use - unless it is not technically feasible for the slurry system used in the herd (§ 26 stk. 2, BEK 323) [2].
8.	§ 20 [2]. All sows and piglets must have access to appropriate amounts of manipulable materials [2], [3].
9.	Tooth polishing is allowed if it is documented that sow teats or other pigs' heads have been injured due to lack of tooth grinding. Tooth polishing must be performed by a vet or by a person trained/experienced in grinding teeth. Clipping of canine teeth is illegal [2]. Before grinding, steps must have been taken to prevent injuries to sow teats and other pigs' heads.
10.	Preventive measures must be taken to solve tail biting problems. If it is necessary to perform tail docking, it must be done within the first 2 - 4 days of life. Tail docking must be performed by a vet or a person trained and experienced in tail docking. Dock as little as possible of the tail and no more than half of the tail [4].
11.	Castration must only be performed by a vet or a person trained and experienced in castrating piglets. After the seventh day of life, castration must be performed by a vet and prolonged analgesia must be administered. Castration must not be done by tearing of tissue [4]. As of January 1, 2011, statutory requirements stipulate that all Danish pigs must receive pain relief in connection with castration [8].
12.	Piglets must not be weaned before they are minimum 28 days old, unless the welfare or health of the sow or the piglets would otherwise be jeopardised [2]. However, piglets may be weaned from the sow up to seven days earlier if they are moved into specialised facilities that have been emptied, cleaned and disinfected and that are separated from facilities where sows are kept.
13.	§15: On pig farms where visiting rules with quarantine periods from visits to other pig farms are being observed, the person in charge of the pigs must be in possession of a captive bolt pistol and be instructed in how to use it. §52: When the animal has been stunned, bleeding must be initiated as quickly as possible after stunning and it must be quick, heavy and complete. Under all circumstances, bleeding <u>must</u> be complete before the animal gains consciousness [5].

H30-34 gemt separat

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