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Space allowance for sows and piglets, mixing and hospital pens

INCEPTION IMPACT ASSESSMENT
Ref. Ares(2021)4402058 - 06/07/2021

A prohibition on cages/stalls

Option: Prohibit the use of cages/stalls for all species referred to in the ECI "End the cage age" i.e. pigs (…) to apply after certain transition period(s). This measure would update legislation in the light of scientific evidence, while ensuring a higher level of animal welfare for an important number of species.

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Space allowance for sows and piglets in the farrowing pen

Countries with legislation on loose housing of sows in the farrowing pen – „no confinement“

Norway

- minimum pen size 6 m² (pens in new buildings usually lager 7-7,5 m²)
- minimum width of pen 180 cm
- mostly solid floors (solid floor for „all pig to rest simultaneously“)

Sweden (1983?/1988)

- minimum pen size 6 m²
- mostly solid floors

Switzerland (1997/2007)

- sow must be able to turn around unhindered
- minimum pen size 5,5 m² („Tierschutzkontrollhandbuch“)
- solid floor (< 2% drainage) at least 2,25 m² („Tierschutzkontrollhandbuch“)

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Countries with legislation on loose housing of sows in the farrowing pen – „temporary confinement“

Austria (2013/2033)

- minimum pen size 5,5 m²
- minimum width of pen: 160 cm
- 1/3 of floor surface must be solid (< 5% drainage)

Germany (2021/2036)

- minimum pen size 6,5 m²
- sow must be able to turn around unhindered

EFSA 2022

5.9.2. Recommendations on Specific ToRs 2 and 3: space allowance on farrowing systems

1) For animal welfare reasons, periparturient and lactating sows should not be housed in farrowing crates but in farrowing pens.
2) When housing a lactating sow and her piglets in a farrowing pen, the minimum available space for the sow should be around 6.6 m2 in order to achieve comparable piglet mortality to a farrowing crate system. This equates to ~ 7.8 m^2 total pen size.
3) A larger pen size than referred to in the recommendation above is recommended to improve the locomotory possibilities for the sow.
4) Training to farm staff should be offered to minimise welfare compromises during the transition period away from farrowing crates.

5.9.5. Recommendations on the time needed for adaptation

1) Staff should receive training in appropriate management of free farrowing system to facilitate rapid adaptation.
2) Temporary crating systems should not be used as interim step for farms that want to convert from crates to complete free farrowing, if the total floor surface area they occupy is insufficient to allow for a well-functioning pen system.
3) Genetic selection to improve pig welfare in free farrowing systems should be addressed by breeding organisations. Such traits include good piglet viability, low birth weight variability, good maternal behaviour, good leg conformation, good udder quality.

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FLI scientific opinion 2018
Dimensions of space for sows in farrowing pen

Width: 196 cm – 202 cm

→ Sow must be able to turn around unhindered

Lenght: 227 cm - 252 cm

→ Sow must be able to lie down and get up unhindered

= 5 m² for the sow

In addition space is needed for the piglets

Why is it so important that sows have enough space for postural changes?

“sows group their piglets together before lying down, by extensively rooting, scratching and turning around on the lying surface. This causes the piglets to gather together, whereupon the sow carefully lies down beside them.” (Weber et al. 2007)

To do this sows need:

- enough space
- non-slippery floors
- adequate pen structure

EFSA 2022

5.7.12.3. Summary conclusions on the amount of sow space post-farrowing (piglets' perspective)

1) Experimental studies suggested that with appropriate pen size, it is possible to achieve the same piglet mortality in a system where the sow is never crated as with permanent crating.

Sow production data
Norway (no confinement) vs Germany (crates)

		2019	2020	10% best
Kull per årspurke		2,20	2,21	2,33
Levendefødt per kull	born alive	14,5	14,6 15,5	16,2 16,8
Dødfødt per kull	stillborn	1,1	1,1	0,9
Totalfødt per kull		15,7	15,7	17,1
Avvent per kull	weaned / litter	12,7	12,8 13,1	14,4 14,4
Dødfødte av totalfødte, %		7,1	7,0	5,3
Døde til avvenning, %	preweaning mortality %	12,7	12,2 15,4	11,0 13,0
Totaldødelighet, %		18,9	18,3	15,8
Diegivingstid		33,5	33,4	33,3

Quelle: Ingris Agrarstatistik – animalia.no

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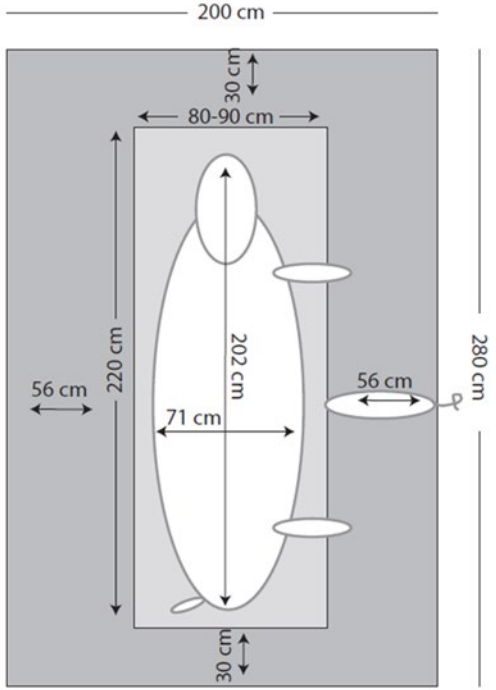
The problem with crates from a legislational point of view

(…) to ensure that those animals are not caused any unnecessary pain, suffering or injury (Article 3 Directive 98/58/EC

(…) having regard (…) to their physiological and ethological needs in accordance with established experience and scientific knowledge (Article 4 Directive 98/58/EC)

(…) rest and get up normally (Annex I Chapter I Directive 2008/120/EC)



Pedersen et al. Housing of sows during farrowing: a review on pen design, welfare and productivity. Livestock housing

Figure 5.2. Schematic drawing of the estimated dimensions of farrowing crates that allow enough space for physical dimension of sow and piglets as well as for dynamic movements for getting up and lying down. The measures are based upon the 95% quartile of the physical dimensions and space used for movements of Danish cross bred production sows and the 95% quartile of length of piglets at 4 weeks of age.

The piglet nest / piglet lying area

"A part of the total floor, sufficient to allow the animals to rest together at the same time, must be solid or covered with a mat, or be littered with straw or any other suitable material" (Directive 2008/120/EC)

	Recommendations on the welfare of weaners and rearing pigs from Specific ToR 4: types of flooring (Section 7.7.3.5)
42	Pigs should have a solid floor area equivalent to a k-value of 0.033 (equal to 0.77 m^2 for a 110-kg pig) to accommodate lying behaviour (under thermoneutral conditions), with additional space for activity, feeding/drinking and elimination.

EURCAW: "A typical litter size of 10-14 piglets at weaning takes up 1.1-1.3 m2 when resting (Pedersen et al., 2013a)"

A solid lying area is required until weaning but heating is usually only necessary in the first two weeks of life

Proposal for piglet nest / piglet lying area

	5 kg	13 piglets 5 kg	7 kg	13 piglets 7 kg
0,033 x body weight ^0,67 solid floor for lying in half recumbency (EFSA 2022 / Ekkel et al. 2003)	0,10 m²	1,3 m²	0,12 m²	1,6 m²
0.29 × body weight ^0,53 heated piglet nest (Wheeler et al. 2008)	0,07 m²	0,91 m²	0,08 m²	1,0 m²

Example piglet nest / piglet lying area

Bilder: Archiv Tierschutzdienst

Example piglet nest / piglet lying area

Bilder: Archiv Tierschutzdienst

Summary space allowance for sows and piglets

- optimal pen size should achieve similar piglet mortality compared to crates: 7,8 m² (EFSA)
- minimum pen size should allow for postural changes sow and piglet nest: 6,5 m²
- sow needs a „turning cycle“ of at least 200 cm
- solid lying area for sow: 1,3 m²
- solid lying area for piglets: 1,5 m²
- heatable / littered area for piglets: 0,9 m²
- crates are not necessary, cannot be designed in a legally „sound“ way and have negative animal welfare consequences

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Space allowance for dry and pregnant sows in group housing

Countries with legislation on group housing from weaning until 4 weeks after insemination

- Germany (2021/2029)
- Norway
- Sweden (1983?/1988)
- United Kingdom (1991/1999)
- Austria (2013/2033)
- Denmark (2015/2035)
- Netherlands (1998?/2013)
- Switzerland (1997/2007)

EFSA 2022

	Recommendations on the welfare of gilts and dry sows from Specific ToR 1 (Section 4.6.2)
2	To avoid the welfare consequences of stall housing and the possible consequences of stress during early pregnancy for reproductive performance, it is recommended to group sows at the time of weaning (see Figure 9).
3	The welfare consequences associated with grouping gilts and sows should be mitigated at any stage (including for cull sows) by good mixing practice, including the use of mixing pens, good home pen design/layout and good feeding and general management (see Table 38).
4	Staff should be trained to mitigate handling stress in sows, particularly in stage 1 (preservice), and in identifying and mitigating the other welfare consequences in all stages.
5	The management of sows in lactation should ensure that sows are weaned (including cull sows) in good physical condition for grouping.

Space allowance after weaning and around insemination

- space for fighting (to establish social rank)
- space to allow oestrus behavior

New legislation in Germany:

- 5 m² from weaning until insemination
- Possibilities to escape and hide from other sows must be available. Free access feeding stalls are not considered an adequate possibility to escape and hide

Space allowance after weaning and around insemination

Lene Juul Pedersen
BTSF animal welfare in pig production

Space allowance for dry and pregnant sows and gilts in group housing

Article 3 Directive 2008/120/EC:

"*The pen where the group is kept must have sides greater than 2,8 m in length.* ***When fewer than six individuals are kept in a group the pen where the group is kept must have sides greater than 2,4 m in length***"

- What is "the pen"?
- The mentioned pen dimensions should apply to the minimum width of communal areas in which sows encounter other sows
- The "isles" between back end of free access feeding stalls should have a minimum width of 280 (better 300) cm

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Space allowance for dry and pregnant sows and gilts in group housing

Space allowance for dry and pregnant sows and gilts in group housing

Bilder: Archiv Tierschutzdienst

Space allowance for dry and pregnant sows and gilts in group housing

Bilder: Archiv Tierschutzdienst

Spa gilts

Bilder: Archiv Tierschutzdienst

Assessment of free access feeding (and insemination) stalls

Does the space between the iron bars in the stalls count as „available space“?

Only if the space in the stalls ensures that

1. sows can rest in normal body posture
2. sows can stand up and lie down normally (!)
3. total space in the stall is at least 1,3 m² per sow
4. sows can operate the access mechanism themselves and can enter and leave the pens at any time (difficult to verify for CA)

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Summary
Space allowance of dry and pregnant sows and gilts

- Space allowance from weaning until the last day of insemination should be between 5 and 7 m²
- Minimum width in a communal area in which sows encounter other sows should be at least 280 cm
- Possibilities to escape and hide from other sows (in addition to free access feedings stalls) are important
- Legislation with regard to the dimensions of free access feeding stalls should be considered

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Space allowance for boars

Summary
Space allowance of dry and pregnant sows and gilts

“Boar pens must be sited and constructed so as to allow the boar to turn round and to hear, smell and see other pigs. The unobstructed floor area available to an adult boar must be at least 6 m2.” (Directive 2008/120/EC Annex I Chapter II A)

Do we need more space for boars?

What about floors?

→ Suggestion: Solid floor equivalent to 0,033 x body weight ^0,67

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Hospital pens

Hospital pens
Current legislation

“Any animal which appears to be ill or injured must be cared for appropriately without delay and, where an animal does not respond to such care, veterinary advice must be obtained as soon as possible. Where necessary sick or injured animals shall be isolated in suitable accommodation with, where appropriate, dry comfortable bedding”

Directive 98/58/EC Annex No. 3

Hospital pens
“open norms”

1. *“suitable accommodation”*
2. *“where necessary”*
3. *“where appropriate, dry comfortable bedding”*

1 and 3 should be clearer defined in EU legislation

2 can probably be better defined in MS guidelines

Hospital pens
Suggestions

The design of the hospital pen must fulfil the below criteria:

1. soft bed in the lying area constituted by a soft rubber mat or sufficient amounts of bedding to prevent direct contact between the animal and the floor;
2. lying area in m2 = 0,033 x (weight in kg) ^0,67);
3. minimum width of hospital must be at least equal to the length of the pig;
4. a heat source and a cooling facility must be present;
5. stocking density must be reduced (how much reduction depends on general requirements for stocking density)

Hospital pens
Suggestions

“Hospital pens must be available for 3% of pigs present on the farm”

or

“Sufficient hospital pens must be available and as a minimum there must always be one hospital pen ready for use.”

Mixing of pigs

“They (weaners and rearing pigs) should be kept in groups with as little mixing as possible. If pigs unfamiliar with one another have to be mixed, this should be done at as young an age as possible, preferably before or up to one week after weaning. When pigs are mixed they shall be provided with adequate opportunities to escape and hide from other pigs.” (Directive 2008/120/EC Annex I Chapter II D2)

Mixing of pigs
Weaners and rearing pigs

When can / should mixing be allowed?

- directly after weaning
- transition from weaner facilities into fattening facilities (at about 8-10 weeks)
- hospital / separation pens

When can / should mixing not be allowed?

- At the end of the weaning / fattening period

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Mixing of pigs
What about the suckling piglets?

When can piglets be mixed?

- During the first 48 hours after birth (litter equalisation)

When can piglets not be mixed?

- During the rest of the suckling period!

What about the routine transfer of litters to other sows (nurse sows)??

Mixing of pigs
“opportunities to escape and hide”

What can be considered adequate opportunities to escape and hide from other pigs?

→ New requirements on space allowance will (hopefully) ensure more space to escape

→ Do we need structural elements to hide?

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Group housing of suckling sows

What is the problem?
German (new) legislation

“Pens in which sows are housed loose must have a minimum size of 6,5 m²”

“Sows may be confined in a farrowing crate for 5 days around farrowing”

→ Some farms consider using the “traditional” farrowing pen (about 5 m²) for the five days during which sows may be confined in combination with group housing before and after this period

→ Litters would be group housed with other litters at an age of only 3 days!!!

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Why litters of 3d old piglets should not be group housed with other litters

- binding to the sow and consolidation “teat” order takes 7-10 days
- bacterial / viral diarrhea in first week of life is common
- usually variation in age between litters (1-3 days)
- piglets are “too small”, very dependent on (finding) the heated nest and other resources and not able to circumnavigate (interacting) sows

Proposal:

Newborn litters must be housed individually (together with the sow) until the piglets are at least 10 days old

Question:

Do we need space allowances for group housing of suckling sows?

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