

Q2E-Ruminants-Equines-2023-002 May 2023 Space allowance for dairy cows

Space allowance for dairy cows https://doi.org/10.5281/zenodo.7875294





Question raised by requestor

What are the current practices in Member States regarding the space allowance for dairy cows?



Answer

EURCAW *Ruminants* & *Equines* has launched a survey among its national contact points in order to answer the request. After excluding incomplete and ambiguous submissions, as well as duplicates from individual Member States only 16 out of 44 responses could be used for analysis.

In Austria, Denmark, Estonia, Finland, Poland and Sweden, national legislation exists that provides exact information on the space requirements for dairy cow husbandry (details provided in the following section). Other Member States only give a general definition describing that the housing system must meet the physiological and/or behavioural needs of the animals.

Legally non-binding recommendations exist in different Member States. However, these may not necessarily represent best practice and may be subject to regular adjustments, which is why they are not covered in this Q2E.

National legislation providing exact information on the space requirements for dairy cow husbandry

Austria

Austria differentiates between tethered and loose-housing systems with regard to space allowance for dairy cows (1).

Annex 2, Section 2.6. Minimum space requirements at the feeding area are given in Table 1. If cattle in groups are fed rationed or have a time-limited feed provision, one feeding space must be available for each animal. If cattle in groups are fed *ad libitum*, with feed present all day, an animal-to-feeding-place-ratio of 2.5 : 1 must not be exceeded.

Table 1: Minimum space requirements at the feeding area

Body weight [kg]	Width of feeding place [cm per animal]
≤150	40
≤220	45
≤350	55
≤500	60
≤650	65
>650	75

Annex 2, Section 4.2.1. Minimum dimensions in tethered housing systems are given in Table 2.

Table 2: Stall dimensions for tie-stalls in Austria.

Body weight [kg]	Stall length¹ [cm]	Stall length ² [cm]	Stall width [cm]
≤300	130	160	85
>300-≤400	150	185	100
>400-≤550	165	200	115
>550-≤700	175	210	120
>700	185	220	125

¹Short-stall: Space above the feeding trough is permanently available.

²Long-stall: Space above the feeding trough is available only during feeding.



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Annex 2, section 4.2.2.1. Minimum cubicle dimensions in loose-housing systems are given in Table 3. The feeding aisle must at least be 320 cm wide, other aisles must have a width of at least 250 cm. There must be at least one cubicle per animal.

Table 3: Minimum cubicle dimensions in group housing systems in Austria.

Body weight [kg]	Cubicle length ¹ [cm]	Cubicle length ² [cm]	Cubicle width [cm]
≤300	190	170	85
>300-≤400	210	190	100
>400-≤550	230	210	115
>550-≤700	240	220	120
>700	260	240	125

¹Wall-facing cubicles.

Denmark

In Denmark detailed legislation is available taking into account breed type, housing system and functional area of a barn (2).

- §2, 13) Small breeds: breeds and crosses thereof having an average adult weight of less than 550 kg.
- §2, 14) Large breeds: breeds and crosses thereof having an average adult weight of 550 kg or more.
- § 35. On holdings with dairy cattle, individual pens shall have an area of at least 10 m² for small breeds and 12 m² for large breeds. Section 2: Group pens shall have an area per cow of at least 6.8 m² for small breeds and 8.0 m² for large breeds.
- § 55. Dairy cows shall not be tethered. Section 2: However, dairy cows may be tethered 1) for periods not exceeding 1 hour at the time when the dairy cows are fed; or 2) if it is necessary to tie the dairy cow briefly in connection with examinations, treatment of disease, preventive treatment, insemination, etc. or in connection with milking.
- § 60. The total area where dairy cows remain in the parlour between milkings shall be at least 6.6 m² per dairy cow for small breeds and 8.0 m² for large breeds.
- § 63, Section 3. A feeding place shall be at least 65 cm wide per cow for small breeds and 70 cm wide for large breeds.
- § 66. In cubicle barns there shall be at least one cubicle per dairy cow.
- § 67. The length of cubicles with the row of cubicles against a wall shall be at least 2.8 metres for small breeds and 3.0 metres for large breeds. However, for buildings occupied before 1 July 2010, the length of cubicles with the row of cubicles against a wall shall be at least 2.4 m for small breeds and 2.6 m for large breeds only. Section 2: The length of cubicles where the row of cubicles faces another row or faces an open area shall be at least 2.65 metres for small breeds and 2.85 metres for large breeds. However, for buildings occupied before 1 July 2010, the length of cubicles where the row of cubicles faces another row shall be at least 2.25 metres for small breeds and 2.45 metres for large breeds. Section 3: The width of cubicles shall be at least 1.10 metres for small breeds and 1.25 metres for large breeds.
- § 68. In cubicle barns, the width of the aisle between rows of cubicles shall be at least 2.4 metres for small breeds and 2.6 metres for large breeds. However, for buildings occupied before 1 July 2010, the width of the aisle between the rows of cubicles shall be at least 2.4 m for large breeds only. Section 2: In cubicle barns with one or two rows of cubicles behind the feed fence, the width of the passageway directly behind the feed fence shall be at least 3.2 metres for small breeds and 3.4 metres for large breeds. However, for buildings occupied before 1 July 2010, the width of the passageway immediately behind the feed fence shall be at least 3.2 metres only for large breeds in cubicles with one row of cubicles

²Head-to-head cubicles.



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behind the feed fence and 3.4 metres for large breeds in cubicles with two rows of cubicles behind the feed fence. Section 3: In cubicle barns with three or more rows of cubicles behind the feed fence, the width of the passageway immediately behind the feed fence shall be at least 3.7 metres for small breeds and 4.0 metres for large breeds. However, for buildings occupied before 1 July 2010, the width of the passageway immediately behind the feed fence shall not be less than 3.6 metres.

- § 69. There shall be at least one cross over aisle for every 15 cubicles in barns with more than three rows of cubicles. There shall be at least one cross over aisle for every 20 cubicles in barns with two or three rows of cubicles. Where a row of cubicles is adjacent to a wall, a cross over aisle shall be provided after a maximum of seven cubicles.
- § 70. Without prejudice to sections 2 and 3, the width of cross over aisles in barns with a maximum of three rows of cubicles shall be at least 2.3 metres for small breeds and 2.5 metres for large breeds. Section 2: If a drinking trough or cow brush is placed in a cross over aisle, the width of the cross over aisle shall be at least 3.7 metres for small breeds and 4.0 metres for large breeds. Section 3: If both drinking troughs and cow brushes are placed in a cross over aisle, the width of the cross over aisle must be at least 4.7 metres for small breeds and 5.0 metres for large breeds.
- § 71. Without prejudice to sections 3 and 4, in barns with more than three rows of cubicles, the width of the first cross over aisle from the feed fence shall be at least 4.7 metres for small breeds and 5.0 metres for large breeds if the dairy cows have to pass by one or more rows of cubicles to gain access to the feed fence. Section 2: Without prejudice to sections 5 and 6, the width of other cross over aisles shall be at least 3.7 metres for small breeds and 4.0 metres for large breeds. Section 3: If a drinking trough or cow brush is placed in a cross over aisle, the width of the first cross over aisle must be at least 5.1 metres for small breeds and 5.5 metres for large breeds. Section 4: If both drinking troughs and cow brushes are placed in a cross over aisle, the width of the first cross over aisle shall be at least 5.6 metres for small breeds and 6.0 metres for large breeds. Section 5: If a drinking trough or cow brush is placed in a cross over aisle, the width of the other cross over aisles must be at least 4.2 metres for small breeds and 4.5 metres for large breeds. Section 6: If both drinking troughs and cow brushes are placed in a cross over aisle, the width of other cross over aisles must be at least 4.7 metres for small breeds and 5.0 metres for large breeds.
- § 72. The resting area in deep litter housing shall be at least 5.0 m² per dairy cow for small breeds and 6.5 m² for large breeds.
- § 73. In milking parlours there shall be a separate assembly area for dairy cows immediately before milking. The assembly area shall be at least 1.5 m^2 per dairy cow for large breeds and 1.35 m^2 for small breeds.
- § 87. Individual calving pens shall have an area of at least 10 m² for small breeds and 12 m² for large breeds. Section 2: The pen shall be designed in such a way that the cattle can turn round.
- § 88. Group pens for calving for high yielding dairy cows shall have an area per animal of at least 6.8 m^2 for small breeds and 8.0 m^2 for large breeds. Section 2: In the case of separate resting areas in group pens for calving, the resting area per livestock shall be at least 3.4 m^2 for small breeds and 4.0 m^2 for large breeds. Section 3: The width of the cubicle in group pens for calving shall be at least 1.15 metres for small breeds and 1.30 metres for large breeds.

Space requirements for calves and youngstock are given in Chapters 17 and 18. **Details on the commencement and transition period for these provisions are stated in Chapter 20 of the legislation.**







Estonia

Estonia provides figures for group housed dairy cows but not for tie-stall systems (3).

§ 9. Minimum floor area per animal in group housing systems depending on age and body weight of the animal and flooring system are given in Table 4.

Table 4: Minimum floor area per animal depending on age, body weight and flooring system.

Age of cattle [months]	Average body weight [kg]	Fully slatted floor [m ²]	Deep litter [m²]
8-12	200-300	1.8	2.5
12-15	300-400	2.0	3.0
15-20	400-500	2.3	3.5
>20	>500	2.5	4.0

§ 10. Cubicle dimensions depending on age and body weight of the animal are given in Table 5.

Table 5: Cubicle dimensions depending on age and body weight of animals.

Age of cattle [months]	Average body weight [kg]	Cubicle length [m]	Cubicle width [m]
2-6	175	1.70-1.90	0.80-0.90
6-18	350	1.90-2.00	0.90-1.00
18-22	500	2.00-2.10	1.00-1.20
>22	700	2.10-2.40	1.20-1.30

Finland

In Finland only an exercise area for tethered cows is defined (4).

Section 18 (3): Dairy cows and heifers raised mainly for milk production which are kept tied up must have access to pasture or appropriate exercise yard for the minimum of 60 days during a period which starts on 1 May and ends on 30 September. The surface area of the exercise yard must be at least 6 m^2 per bovine kept in it. However, the total surface area must always be at least 50 m^2 .

Section 18 (4): The State Provincial Office may grant an exemption from the requirement concerning access to pasture or exercise yard referred to in subsection 3 if the farm has no suitable pasture available or if other space suitable for exercise cannot be reasonably arranged or if compliance with the requirement is unreasonable due to reasons relating to traffic, terrain or distance. The exemption may be granted for the maximum of three years at a time and it will be revoked if the preconditions for granting the exemption cease to exist.

Poland

Poland defines space requirements for dairy cows depending on the housing system (indoor tethered or loose-housed, free-range outdoor) (5).

- § 1. The regulation shall establish the minimum conditions for keeping: 1) cattle, except for calves
- § 2, Section 1. The animals listed in § 1 shall be kept: 1) in an enclosure designed for their maintenance, 2) in a free-range system.
- § 11, Section 1. Cattle, with the exception of calves, maintained in an enclosure designed for their maintenance (referred to in § 2 Section 1.1), shall be maintained: 1) tethered; 2) loose-housed: a) with cubicles, b) without cubicles.



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- § 11, Section 2. In the system of keeping cattle tethered (referred to in § 11 Section 1.1), the dimensions of the stand shall be for keeping: 1) cows and heifers over the 7th month of gestation: a) length at least 1.6 m, b) width at least 1.1 m;
- § 11, Section 3. In the system of keeping cattle loose-housed with cubicles (referred to in Section 1. 2 a), the dimensions of the cubicle should be in the case of keeping: 1) cows and heifers over the 7^{th} month of gestation: a) length at least 2.1 m, b) width at least 1.1 m;
- § 11, Section 4. In the system of keeping cattle loose-housed without cubicles (referred to in section 1. 2 b), the area, per head, should be in the case of keeping: 1) cows and heifers over 7 months of gestation at least 4.5 m^2 ;
- § 12. In the system of keeping cattle in a free-range system (referred to in § 2, Section 1. 2), the area in which cattle are kept, per head, should be in the case of keeping: 2) cows at least 15 m²;

Sweden

In Sweden there are detailed regulations on cattle husbandry available (6).

Chapter 3, 8 §. Minimum space requirements at feeding in loose housing without cubicles for lying or feeding are given in Table 6.

Table 6: Minimum space requirements in loose pens without lying or feeding cubicles.

		Pens with draining	Other pens[m²/animal]	
Animal category	Maximum body weight [kg]	floors only [m²/animal]	Lying area ^{1,2}	Total area ²
Young cattle	400	1.9	2.6	3.7
Young cattle	600	2.3	3.1	4.4
Young cattle	>600	2.6	3.4	4.8
Suckler cows ³ and non-lactating cows			3.44	4.8
Dairy cows and foster cows ³			6.04	8.5

¹Refers also to minimum space in open shed without feeding area.

 $^{{}^{2}\}mbox{Refers}$ also to minimum space in open shed with feeding area.

³Including calves up to 3 months of age.

⁴Excluding space for calf hutch.



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Chapter 5, 10 §. Minimum space requirements for tie stalls are given in Table 7.

Table 7: Minimum space requirements for stalls in tethered systems.

	Maximum body	Long stall, Lying stall ¹		Short	stall ²
Animal category	weight [kg] ´	Length [m]	Width [m]	Length [m]	Width [m]
Young cattle	250	1.7	0.90	1.30	0.90
Young cattle, Adult cattle	400	1.9	1.00	1.50	1.00
Young cattle	600	2.0	1.10	1.60	1.10
Young cattle	>600	2.1	1.20	1.70	1.20
Adult cattle	500	2.0	1.10	1.60	1.10
Adult cattle	650	2.2	1.20	1.70	1.20
Adult cattle	>650	2.3	1.25	1.80	1.25

¹The stall shall be 0.3 m longer if the divider and the front wall prevent the animal from moving its head to the side or forward when standing up.

Chapter 5, 13 §. Walkways in loose housing systems must not be so narrow that animals risk becoming trapped.

Chapter 5, 14 §. Minimum aisle widths in loose housing systems are given in Table 8.

Table 8: Minimum aisle widths in loose housing systems.

	Adult a	nimals	Young cattle	
Aisle between	≤25 animals/group [m]	>25 animals/group [m]	≤250 kg [m]	>250 kg [m]
lying cubicle row and wall; feeding cubicle row and wall ¹	1.80	2.00	1.40	1.80
two lying cubicle rows; lying cubicle row and feeding cubicle row	2.00	2.20	1.50	1.90
feeding table and wall ¹ ; lying cubicle row and feeding table	2.80	3.00	2.10	2.50

¹A wall is equivalent to a boundary with deep-straw bedding.

²For short stalls with forward restriction (intermediate stalls) the distance between the restriction and the stall's rear kerb, when measured 1 m above the floor should be equal to the length of a long stall.



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