

# Welfare Potential by Production System for Beef Cattle

Level	Example System		Space allowance <sup>1</sup>	Enrichment (Shade and shelter, bedding and enough forage when off pasture <sup>2</sup> )	Feed
1 = bad	Fully slatted indoors		Low	No straw bedding	Grain or other concentrate significant proportion of diet
	Concentrated animal feeding operation (feedlot)		Low	No straw bedding No shelter/shade	Grain or other concentrate significant proportion of diet
2	Indoor part slatted flooring		Low	No straw bedding	Grain or other concentrate significant proportion of diet
	Straw barns/yards		Low to Medium	Straw bedding	Grain or other concentrate significant proportion of diet
3 = better	Semi-extensive system. Pasture reared in grazing season.	On pasture	Appropriate for feed intake on pasture. Does not harm the soil - prevent overgrazing <sup>3</sup>	Shade and/or shelter (depending on the climatic conditions)	Grass is a significant part of diet - (May be supplemented by grass, concentrate, haylage, maize or other whole crop, waste products or suitable other <sup>4</sup> )
	Well ventilated straw yards or extensive paddocks are permitted	Off pasture	High	Environment is enriched: Forage available ad libitum and scratching posts, shade/shelter provided, comfortable bedding <sup>5</sup>	
4 = best	Pasture reared/extensive		Appropriate for feed intake on pasture	Shade/shelter provided	Grass grazing (silage, concentrate, or suitable other to supplement <sup>4</sup> )

<sup>1</sup>Space allowance (see details overleaf). We recommend space allowances that fall into the high category, as defined by:

Low - ABM FS to general activity line (k=0.068); Medium – general line to ABM Solid; High – in line with RSPCA / extrapolated K (0.131)

<sup>2</sup> Shelter and shade should be enough for every animal to be able to use it at the same time. Bedding should comprise straw or other suitable substrate – plastic slats and rubber mats are not acceptable as 'bedding'

<sup>3</sup> Pasture meets minimum nutritional requirements. Recommended: more than 1500kg of dry matter/ha at the beginning of grazing season (or grass that is more than 4-5 cm height.)

<sup>4</sup> Forage should make at least 60% of the diet

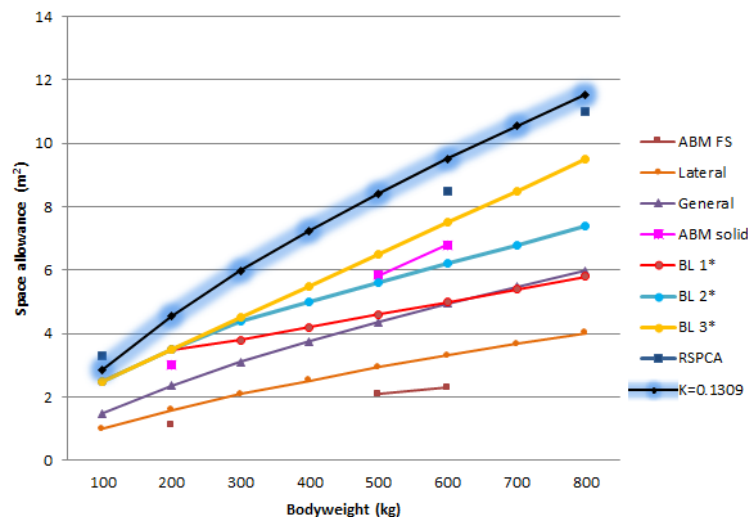
<sup>5</sup> Bedding material should be locally available and accordingly to the climatic conditions (e.g: straw bedding, woodchip bed)

Notes:

- i. There is no species-specific European legislation for beef cattle
- ii. Tethering for part or whole of the housing period would not be acceptable at Level 3
- iii. Mutilations (Disbudding, Dehorning and Castration) should not be conducted routinely, however if they are performed they must be done with local anaesthesia and post-operative analgesia. This also applies to any other painful procedures.
- iv. Caesarean section – we recommend breeds with a high prevalence of caesarean section be prohibited

**Space allowance (m<sup>2</sup>/animal) for beef cattle according to bodyweight, scheme, floor type and three k values in the allometric equation  $A=kW^{0.67}$ .**

The space required for an animal is given by the allometric equation  $A=kW^{0.67}$ , where A = m<sup>2</sup>/animal, k is the empirical constant and W is bodyweight (kg). Space allowance increases non-linearly as body weight and/or k value increase. The value of k has been calculated for animals lying down in sternal (0.037) and lateral recumbency (0.046) (with provision to stand, feed and drink). The value of k required to provide space for activity indoors or thermal regulation is unknown, but can be extrapolated from best practice.



Legends:

- ABM FS = Assured British Meat (UK Red Tractor), industry standard for fully slatted systems indoors.
- Lateral (k=0.046), and recommended for pigs with tails in indoor lightly strawed systems and standard turkey production systems
- General (k=0.068) – extrapolated from best practice examples of pigs in deep straw barns and turkeys in pole barn systems (with natural light)
- ABM Solid = Assured British Meat (UK Red Tractor), industry standard for indoor systems with solid floors
- BL 1\*, 2\*, 3\* Beter Leven 1, 2, 3, star, scheme developed by Dierenbescherming (Dutch animal welfare organisation)
- RSPCA – Freedom Food scheme for loose indoor housing with solid floor and bedded lying area (total area given)
- K=0.131 – k value extrapolated from RSPCA values and ~ twice that for k value of general activity

Kg	ABM FS	Lateral	General	ABM solid	BL 1*	BL 2*	BL 3 *	RSPCA	K = 0.131
100		1.0	1.5		2.5	2.5	2.5	3.3	2.9
200	1.1	1.6	2.4	3.0	3.5	3.5	3.5		4.6
300		2.1	3.1		3.8	4.4	4.5		6.0
400		2.5	3.8		4.2	5	5.5		7.2
500	2.1	2.9	4.4	5.9	4.6	5.6	6.5		8.4
600	2.3	3.3	4.9	6.8	5	6.2	7.5	8.5	9.5
700		3.7	5.5		5.4	6.8	8.5		10.5
800		4.0	6.0		5.8	7.4	9.5	11.0	11.5