

1 Appendix I: Animal welfare features per criterion of the animal welfare module of the simulation model and the feature scores of the default
2 situation.

Criterion	Feature	Parameter	Score default
Absence of prolonged thirst	Water supply	Number of drinking nipples for sows	400
	Number of clean drinking spots	Number of clean drinking nipples for sows	350
	Number of sows per drinking spot	Number of sows per drinking spot	1
Comfort around resting	Bursitis	0 = no lump, 1 = lump in size of walnut, 2 = lump in size of tangerine	0: 60%, 1: 40%
	Absence manure on body sow	0 = <10% manure, 1 = 10-30%, 2 = >30%	0: 70%, 1: 20%, 2: 10%
	Absence manure on body piglet	0 = <10% manure, 1 = 10-30%, 2 = >30%	0: 70%, 1: 20%, 2: 10%
	Shoulder sores sow	0 = whole, 1 = old wound, 2 = fresh wound	0: 95%, 1: 4%, 2: 1%
Ease of movement	Surface per sow	Square meters per sow	2.4
	Group size	Number of pregnant sows per pen	20
Absence of injuries	Lameness sow	0 = not lame, 1 = moderately lame (1 leg relieved), 2 = seriously lame (1 leg not used)	0:90%, 1:10%
	Lameness piglet	0 = not lame, 1 = moderately lame (1 leg relieved), 2 = seriously lame (1 leg not used)	0:90%, 1:10%
	Body wounds sow	0 = no scratches, 1 = small scratches, 2 = serious scratches	0: 80%, 1: 15%, 2: 5%
	Body wounds piglet	0 = no biting wounds, 1 = superficial biting wounds, 2 = serious biting wounds that need care	0: 98.8%, 1: 0.5%, 2: 0.7%
	Vulva lesions sow	0 = no wound or scar on vulva, 1 = crust or scar > 2 cm, 2 = fresh wound	0: 90%, 1: 8%, 2: 2%
Absence of disease	Mortality sow	Percentage sows that died in the stables	5%
	Mortality piglet	Percentage piglets that died	13%
Absence of pain induced by management procedures	Tail docking	0 = no tail docking, 1 = tail docking with sedation/analgesia, 2 = tail docking without sedation	2: 100%
Expression of social behaviors	Positive social behavior sow	Percentage snifs/liks without walking away of total behavior observations during five intervals	3.00%
	Positive social behavior piglet	Percentage snifs/liks without walking away of total behavior observations during five intervals	8.00%
	Negative social behavior sow	Percentage aggression with reaction of total behavior observations during five intervals of 2	5.00%
	Negative social behavior piglet	Percentage aggression with reaction of total behavior observations during five intervals of 2	12.00%
Expression of other behaviors	Stereotypies sow	0 = no stereotypies within 15 seconds, 1 = stereotypies within 15 seconds	0: 60%, 1: 40%
	Explorative behavior sow	Percentage exploration of total behavior observations during five intervals of 2 min	48%
	Explorative behavior piglet	Percentage exploration of total behavior observations during five intervals of 2 min	52%
Good human-animal relationship	Human-animal relation score sow	0 = touch head 10 sec, 1 = walks away when touching, 2 = walks away within 10 sec after	0: 18%, 1: 56%, 2: 26%
	Human-animal relation score piglet	0 = touch head 10 sec, 1 = walks away when touching, 2 = walks away within 10 sec after	0: 5%, 1: 34%, 2: 61%
Absence of general fear	Qualitative Behavioral Assessment (QBA) score sow	Sum of scores (0-125) for active, relaxed, fearful, agitated, quit, satisfied, tense, enjoying, social, bored, lively, indifferent, irritated, aimless, happy, sad.	-5
	Qualitative Behavioral Assessment (QBA) score piglet	Sum of scores (0-125) for active, relaxed, fearful, agitated, quit, satisfied, tense, enjoying, social, bored, lively, indifferent, irritated, aimless, happy, sad.	-5
	Qualitative Behavioral Assessment (QBA) score sow	Sum of scores (0-125) for active, relaxed, fearful, agitated, quit, satisfied, tense, enjoying, social, bored, lively, indifferent, irritated, aimless, happy, sad.	-5
	Qualitative Behavioral Assessment (QBA) score piglet	Sum of scores (0-125) for active, relaxed, fearful, agitated, quit, satisfied, tense, enjoying, social, bored, lively, indifferent, irritated, aimless, happy, sad.	-5

3 Sources: Criteria, features and parameters based on Welfare Quality® (2009), feature scores based on Vermeer et al (2012)