

APPENDIX 1. Probabilities of predictors used in the final models for prediction of animal-based Welfare Quality® indicators. Indicators were not used as potential predictors when they belonged to the same assessment method as the outcome variable (indicated in grey).

Animal-based Welfare Quality® indicator (outcome variable):

Predictor:	ADF index	QBA index + 10	Freq. head butts/cow/h	Freq. displacements/cow/h	Mean time to lie down (s)	% of cows:	- colliding with stall	- lying outside lying area	- dirty hind legs	- dirty udder	- dirty hind quarters	- ocular discharge	- nasal discharge	- diarrhoea	- vulvar discharge	- very lean	- lame	- severely lame	- hairless patches	- lesions/swellings
Herd size		**										+			*			*		
ADF index	■	**						*									**	**		*
QBA index	***	■		**				*									**	**		+
Freq. head butts/cow/h			■								*			**	**		+	+	+	
Freq. displacements/cow/h		*		■									**			+				
Freq. coughing/cow/15minutes					■								*					*		
Mean time to lie down (s)						■				+							*	***		
% of cows:							■													
- colliding with stall												*		†	**	***				*
- lying outside lying area	*	*													*				**	**
- dirty hind legs	*		**	†	*										**					
- dirty udder							*	†												
- dirty hindquarters			*																	
- ocular discharge					*		**													
- nasal discharge				*																
- diarrhoea			**				+													
- vulvar discharge		+		*																

