Table 2a. HWAP measures conducted after entering the stable, whilst horses were eating their morning feed. Presented in the order they were assessed, the way they were scored and with further description of each measure. AB = animal, RB = resource, MB = management based.

Measure	Score	Description
Sum of RH and T in stable	Sum of RH and T (ºC) 0 = < 80 if T >10 ºC, < 90 if T < 10 ºC 1 = > 80 if T >10 ºC, > 90 if T<10 ºC	RB, Measured just outside boxes and stalls when stable doors are still closed using a RH and T meter
Noise	0 = acceptable level not considered noisy 1 = considered noisy/loud	RB, Estimation if above or below 65 dB by audibly perceiving noise in stable

Table 2b. HWAP measures conducted in boxes or tie-up stalls whilst the horses were eating in the morning. Horses stood in their box or tie-up stall and were only held by personnel if they showed aggressive or avoidance behaviours

Measure	Score	Description
Occurrence of undesirable behaviours	0 = none 1 = occurrence of unwanted behaviour. Onset of behaviour noted.	AB, Direct observation of aggression or stereotypy during morning feeding and before being let out into the paddock in the morning. Information from owner regarding onset.
BCS	1 = very poor 2 = moderate 3 = good 4 = fat 5 = very fat	AB, Fat deposits on neck, back and ribs assessed according to Carroll and Huntington (1988)
Thermal discomfort	0 = no sweating or shivering 1 = sweating or shivering	AB, Direct observation of whole body
Hoof condition	0 = normal 1 = abnormal shape or severe cracks	AB, Scored in stable by visual assessment of all four hooves
Wounds	0 = no wounds or chafing 1 = chafing or wounds with hair loss and broken skin 2 = severe wounds in need of veterinary treatment	AB, Scored in stable, location of wound or chafing noted, whole body assessed. Separated from wounds in areas where equipment touches horse (scored as equipment chafing)
Coughing	0 = no 1 = yes	AB, Noted when horses fed in the morning and during physical assessment.
Hampered breathing	0 = normal 1 = hampered	AB, Observing flank movement for about one minute
Ocular discharge	0 = absent 1 = present but slight around corner of eye 2 = present and running down cheek or all around eye	AB, Direct observation of both eyes

Nasal discharge	0 = present but slight and uncoloured 1 = present and coloured/thick	AB, Direct observation of both nostrils
Skin condition	0 = normal 1 = flaking, crusts etc.	AB, Coat was separated with fingers all over the horse and any occurrence of abnormality was scored 1
Coat condition	0 = normal 1 = matte or partially long 2 = matte and abnormally long or ragged	AB, Season taken into consideration so that a winter coat was not assessed as long, whole body assessed
Mane and tail	0 = normal 1 = some signs of scratching 2 = severe signs of scratching with broken skin	AB, Observation of tail and mane (both sides)
Equipment chafing	0 = none 1 = some hair loss or rugged coat 2 = hair loss or wounds	AB, Observation of areas on horse where equipment touches (e g head, under saddle, on legs) on both sides of body, Kept separate from other wounds not in these areas.
Rug cleanliness	0 = clean 1 = hairy or dirty	RB, Inside of rugs assessed on horses supplied with rugs (all rugs, both for indoor and outdoor use)

Table 2c. HWAP measures conducted whilst horses were led to the paddock from the stable.

Measure	Score	Description
Bumping into obstacles or slipping when moving to paddock	0 = no slipping, tripping or bumping 1 = one of the above occurred 2 = two or more of the above occurred	AB, Direct observation of horses when moving from stable to paddock in the morning
Lameness	0 = no lameness 1 = lame or very stiff, uneven steps 2 = not weight bearing on one leg	AB, Assessed on hard surface in walk and trot 10 m from front, 10 m from side and 10 m from behind, horse led by stable personnel

Table 2d. HWAP measures conducted whilst horses were in the paddock.

Measure	Score	Description
Housing type	0 = group housing 1 = box 2 = tie-up stall	RB
Ceiling height	Height in meters	RB, Measured from bedding to ceiling with laser meter
Housing size	Box or stall size in m^2	RB, Measured from wall to wall with laser meter
Possibility of social contact	0 = see, touch, smell and hear other horses 1 = one or two of these missing 2 = two or more missing,	RB, Measured by observing horses in box or tie-up stall and placed in context with size of horse, height of partitions) and opportunities for contact in paddock

Measure	Score	Description
	social isolation	
Visual horizon	No of sides with possibility for the horse to see around it in the housing.	RB, Bars or partly open partitions count as a visual horizon/side, as does open windows where the horse can stick its head out.
Mould	0 = none 1 = some damp patches 2 = visible mould and dampness	RB, Observation of boxes and tie-up stalls, especially walls and ceiling
Condensation	0 = none 1 = some at vents and windows 2 = visible and dripping/running	RB, Observation of boxes and tie-up stalls, especially walls, ceiling, vents and windows
Fresh air inlet	0 = direct delivery of air 1 = indirect 2 = no inlet or completely closed	RB, Observation of air inlets and how they bring air in to the individual box or tie-up stall
Enrichments	0 = haynet, haybar, edible straw o other enrichment present 1 = no enrichment	RB, Enrichments aimed at encouraging feed seeking behaviour and prolonging feeding time in the stable
Distance to adjacent feeding point	0 = > 2 m 1 = < 2m	RB, Measured between feeding points for roughage from middle in one roughage pile to middle of the roughage pile in adjacent box or tie-up stall
Roughage height	Height in meters	RB, Measured from middle of haynet/haybar etc. to bedding or scored as 0 m if placed directly on bedding
Height of concentrate trough	Height in meters	RB, Measured from bottom of trough to bedding
Water available in stable	0 = yes 1 = no or frozen	RB, Determine water availability in the stable
Height of drinker in stable	Height in meters	RB, Measured from middle of bucket or bottom of automatic drinker to bedding
Drinker function stable (automatic only)	0 = functions 1 = does not function	RB, Drinker pressed to assess difficulty to release water or if water squirts
Drinker flow (automatic only)	0 = 8 l/min or more 1 = less than 8 l/min	RB, Measured by pushing gauge for 1 minute and measuring the volume released into a bucket
Cleanliness of water in stable	0 = clean 1 = slightly dirty 2 = dirty and slimy	RB, Visual inspection to check for presence of manure, dirt or algae in the water

Table 2e. Paddock measures assessed when horses are present

Measure	Score	Description
Paddock size	Mean m^2 per horse and group	RB, Estimated using a digital map or

Measure	Score	Description
		measured directly with a laser meter if feasible
Cleanliness of water in paddock	0 = clean 1 = slightly dirty 2 = dirty and slimy	RB, Visual inspection to see presence of manure, dirt or algae in the water
Water available in paddock	0 = yes 1 = no or frozen	RB, Score whether water is frozen (0) or not (1)
Paddock surface	0 = dry and even space for all horses 1 = muddy and/or uneven or nor enough dry space for all horses 2 = uneven, mud reaching over hooves, not enough dry area for all horses	RB, Direct observation of surface in whole paddock

Table 2f. Information from the stable manager.

Measure	Score	Description
Estimated time with roughage available	0 = at least 6 h/day 1 = 3-6 h/day 2 = less than 3 h/day	MB, Record feeding episodes occasions (information from stable manager) and amount of roughage per day (from lists of feed)
Time in training	Hours per week	MB, Information from stable manager
Time in paddock	Hours per day	MB, Information from stable manager
Group size	Number of horses per paddock	MB, Information from stable manager
Pasture access	Weeks per year	MB, Information from stable manager.
Farrier intervals	Weeks between farrier visits	MB, Information from stable manager
Roughage fed without water	0 = no 1 = yes	MB, Information from stable manager
Order of feed types	0 = concentrates fed together with or after roughage 1 = concentrates fed alone or before roughage	MB, Information from stable manager
Additional information about the horses such as age, gender, height at withers, breed, main type of use and veterinary history (known diseases etc.) were also gathered by interviewing the stable managers.		

Table 3. Measures with 100% agreement between assessments that were considered reliable and excluded from analysis.

Measure	Score distribution or mean (±SD)	
	Assessment 1	**Assessment 2**
Roughage height	Stable 1: 0.0 (±0.0) Stable 2: 0.0 (±0.0)	Stable 1: 0.0 (±0.0) Stable 2: 0.0 (±0.0)
Estimated time with roughage available	Stable 1: 0 = 15 1 = 0 Stable 2: 0 = 22 1 = 0	Stable 1: 0 = 15 1 = 0 Stable 2: 0 = 22 1 = 0
Water available in stable	Stable 1: 0 = 15 1 = 0 Stable 2: 0 = 22 1 = 0	Stable 1: 0 = 15 1 = 0 Stable 2: 0 = 22 1 = 0
Water available in paddock	Stable 1: 0 = 14 1 = 0 Stable 2: 0 = 21 1 = 0	Stable 1: 0 = 14 1 = 0 Stable 2: 0 = 21 1 = 0
Noise	Stable 1: 0 = 15 1 = 0 Stable 2: 0 = 22 1 = 0	Stable 1: 0 = 15 1 = 0 Stable 2: 0 = 22 1 = 0
Thermal discomfort: sweating or shivering	Stable 1: 0 = 15 1 = 0 Stable 2: 0 = 22 1 = 0	Stable 1: 0 = 15 1 = 0 Stable 2: 0 = 22 1 = 0
Paddock size	Stable 1: Horse 953 (±257) Group 4671 (±3277) Stable 2: Horse 227 (±253) Group 849 (±292)	Stable 1: Horse 953 (±257) Group 4671 (±3277) Stable 2: Horse 227 (±253) Group 849 (±292)
Time in paddock	Stable 1: 7.0 (±0.0) Stable 2: 5.5 (±1.7)	Stable 1: 7.0 (±0.0) Stable 2: 5.5 (±1.7)
Pasture access	Stable 1: 7.0 (±0.0)	Stable 1: 7.0 (±0.0)

	Stable 2: 7.0 (±0.0)	Stable 2: 7.0 (±0.0)
Hoof condition	Stable 1: 0 = 15 1 = 0 Stable 2: 0 = 22 1 = 0	Stable 1: 0 = 15 1 = 0 Stable 2: 0 = 22 1 = 0
Farrier intervals	Stable 1: 6-7 Stable 2: 6-7	Stable 1: 6-7 Stable 2: 6-7
Collisions or slipping when moving to and from paddock	Stable 1: 0 = 14 1 = 0 2 = 0 Stable 2: 0 = 21 1 = 0 2 = 0	Stable 1: 0 = 14 1 = 0 2 = 0 Stable 2: 0 = 21 1 = 0 2 = 0
Roughage fed without water	Stable 1: 0 = 15 1 = 0 Stable 2: 0 = 22 1 = 0	Stable 1: 0 = 15 1 = 0 Stable 2: 0 = 22 1 = 0
Concentrates fed without roughage or before roughage	Stable 1: 0 = 15 1 = 0 Stable 2: 0 = 22 1 = 0	Stable 1: 0 = 15 1 = 0 Stable 2: 0 = 22 1 = 0
Coughing	Stable 1: 0 = 15 1 = 0 Stable 2: 0 = 22 1 = 0	Stable 1: 0 = 15 1 = 0 Stable 2: 0 = 22 1 = 0
Hampered breathing	Stable 1: 0 = 15 1 = 0 Stable 2: 0 = 22 1 = 0	Stable 1: 0 = 15 1 = 0 Stable 2: 0 = 22 1 = 0
Nasal discharge	Stable 1: 0 = 15 1 = 0 Stable 2: 0 = 20 1 = 0	Stable 1: 0 = 15 1 = 0 Stable 2: 0 = 20 1 = 0
Condensation	Stable 1: 0 = 15 1 = 0 2 = 0	Stable 1: 0 = 15 1 = 0 2 = 0

	Stable 2: 0 = 22 1 = 0 2 = 0	Stable 2: 0 = 22 1 = 0 2 = 0
Mane and tail	Stable 1: 0 = 14 1 = 1 2 = 0 Stable 2: 0 = 20 1 = 0 2 = 0	Stable 1: 0 = 14 1 = 1 2 = 0 Stable 2: 0 = 20 1 = 0 2 = 0
Possibility of social contact	Stable 1: 0 = 15 1 = 0 2 = 0 Stable 2: 0 = 21 1 = 1 2 = 0	Stable 1: 0 = 15 1 = 0 2 = 0 Stable 2: 0 = 21 1 = 1 2 = 0
Horses per paddock	Stable 1: 5.6 ($\pm$2.2) Stable 2: 4.0 ($\pm$0.7)	Stable 1: 5.6 ($\pm$2.2) Stable 2: 4.0 ($\pm$0.7)
Occurrence of undesirable behaviours	Stable 1: 0 = 13 1 = 2 Stable 2: 0 = 19 1 = 1	Stable 1: 0 = 13 1 = 2 Stable 2: 0 = 19 1 = 1
Enrichments	Stable 1: 0 = 15 1 = 0 Stable 2: 0 = 22 1 = 0	Stable 1: 0 = 15 1 = 0 Stable 2: 0 = 22 1 = 0
Visual horizon	Stable 1: 0 = 0 1 = 7 2 = 8 3 = 14 4 = 12 Stable 2: 0 = 0 1 = 7 2 = 8 3 = 14 4 = 12	Stable 1: 0 = 0 1 = 7 2 = 8 3 = 14 4 = 12 Stable 2: 0 = 0 1 = 7 2 = 8 3 = 14 4 = 12

Table 4. Comparison of results between assessments (within individual horses). Measures derived from the stable management (i e not measured by assessor) are marked*. Measures where Kendall's tau could not be calculated due to skewed scoring or lack of some scores are marked **. Means are presented with standard deviation (SD) within brackets where applicable along with coefficient of variance (CV). N/a for kappa means identical scores between assessments. Measures that were considered reliable (over 85 % percentage agreement and or high kappa agreement) are marked with ***.

Measure	Score distribution, mean (±SD)[CV]		Percentage agreement between assessments	95%; CI	Cohen's kappa (SE)	Kappa agreement	Kendall's tau	Paired t-test
	Assessment 1	Assessment 2						
BCS	Stable 1: 1 = 0 2 = 0 3 = 1 4 = 11 5 = 3 Stable 2: 1 = 0 2 = 0 3 = 18 4 = 2 5 = 0	Stable 1: 1 = 0 2 = 0 3 = 4 4 = 11 5 = 0 Stable 2: 1 = 0 2 = 1 3 = 18 4 = 1 5 = 0	76.5	58.8; 89.3	0.56 (0.14)	Moderate	0.9	n/a
Distance to adjacent feeding point***	Stable 1: 0 = 6 1 = 9 Stable 2: 0 = 11 1 = 11	Stable 1: 0 = 7 1 = 8 Stable 2: 0 = 12 1 = 10	83.3	67.2; 93.6	0.67 (0.17)	Substantial	n/a	n/a
Height of concentrate trough	Stable 1: 0.6 (±0.1) Stable 2: 0.9 (±0.0) Both stables: 0.8 (±0.2)[19.9 %]	Stable 1: 0.6 (±0.2) Stable 2: 0.9 (±0.0) Both stables: 0.8 (±0.2)[20.2 %]	n/a	n/a	n/a	n/a	n/a	Stable 1: P > 0.05 Stable 2: P < 0.01
Height of drinker in stable	Stable 1: 0.7 (±0.2) Stable 2: 1.1 (±0.1) Both stables: 0.9 (±0.2)[26.0 %]	Stable 1: 0.7 (±0.2) Stable 2: 1.1 (±0.0) Both stables: 0.9 (±0.2)[21.9 %]	n/a	n/a	n/a	n/a	n/a	Stable 1: P > 0.05 Stable 2: P > 0.05

Drinker function stable (automatic only)*	Stable 1: 0 = 10 1 = 0 Stable 2: 0 = 21 1 = 1	Stable 1: 0 = 15 1 = 0 Stable 2: 0 = 22 1 = 0	96.6	82.2; 99.9	n/a	n/a	n/a	n/a
Drinker flow (automatic only)*	Stable 1: 0 = 10 1 = 0 Stable 2: 0 = 22 1 = 0	Stable 1: 0 = 10 1 = 0 Stable 2: 0 = 22 1 = 0	96.6	82.2; 99.9	n/a	n/a	n/a	n/a
Cleanliness of drinker in stable	Stable 1: 0 = 3 1 = 12 2 = 0 Stable 2: 0 = 1 1 = 19 2 = 2	Stable 1: 0 = 1 1 = 9 2 = 5 Stable 2: 0 = 6 1 = 15 2 = 1	58.3	40.8; 74.5	0.05 (0.11)	Slight	0.44	n/a
Cleanliness of drinker in paddock	Stable 1: 0 = 1 1 = 13 2 = 0 Stable 2: 0 = 0 1 = 7 2 = 14	Stable 1: 0 = 0 1 = 0 2 = 14 Stable 2: 0 = 0 1 = 0 2 = 21	41.2	24.7; 59.3	0 (0)	Less than chance	0.5	n/a
Housing size	Stable 1: 6.3 (±2.1) Stable 2: 7.3 (±1.6) Both stables: 7.4 (±2.0)[27.2%]	Stable 1: 7.0 (±2.3) Stable 2: 7.4 (±1.6) Both stables: 7.8 (±2.0)[27.2%]	n/a	n/a	n/a	n/a	n/a	Stable 1: P > 0.05 Stable 2: P > 0.05
Sum of RH and T in stable	Stable 1: 0 = 0 1 = 15 Stable 2: 0 = 0 1 = 22	Stable 1: 0 = 3 1 = 12 Stable 2: 0 = 22 1 = 0	58.3	40.8; 74.5	n/a	n/a	n/a	n/a
Fresh air inlet	Stable 1: 0 = 0 1 = 0 2 = 15 Stable 2: 0 = 1 1 = 21 2 = 0	Stable 1: 0 = 0 1 = 0 2 = 15 Stable 2: 0 = 1 1 = 10 2 = 11	69.4	51.9; 83.7	0.4 (0.15)	Fair	0.79	n/a

Time in training	Stable 1: 11.7 (±7.9) Stable 2: 14.8 (±4.1)	Stable 1: 10.8 (±5.3) Stable 2: 14.8 (±4.1)	n/a	n/a	n/a	n/a	n/a	*
Housing type***	Stable 1: 0 = 0 1 = 4 2 = 11 Stable 2: 0 = 0 1 = 12 2 = 10	Stable 1: 0 = 0 1 = 6 2 = 9 Stable 2: 0 = 0 1 = 13 2 = 9	86.1	70.5; 95.3	0.72 (0.16)	Substantial	**	n/a
Ceiling height	Stable 1: 2.9 (±0.1) Stable 2: 6.3 (±1.8) Both stables: 5.0 (±2.2)[44.2%]	Stable 1: 2.9 (±0.1) Stable 2: 6.1 (±1.8) Both stables: 4.9 (±2.2)[44.3%]	n/a	n/a	n/a	n/a	n/a	Stable 1: P > 0.05 Stable 2: P > 0.05
Lameness	Stable 1: 0 = 10 1 = 5 2 = 0 Stable 2: 0 = 18 1 = 3 2 = 0	Stable 1: 0 = 13 1 = 2 2 = 0 Stable 2: 0 = 20 1 = 2 2 = 0	78.1	60.0; 90.7	0.11 (0.16)	Slight	**	n/a
Wounds***	Stable 1: 0 = 14 1 = 1 2 = 0 Stable 2: 0 = 16 1 = 6 2 = 0	Stable 1: 0 = 14 1 = 1 2 = 0 Stable 2: 0 = 17 1 = 5 2 = 0	91.4	76.9; 98.2	0.17 (4.0)	Slight	**	n/a
Paddock surface	Stable 1: 0 = 0 1 = 9 2 = 5 Stable 2: 0 = 19 1 = 0 2 = 2	Stable 1: 0 = 0 1 = 0 2 = 14 Stable 2: 0 = 21 1 = 0 2 = 0	67.7	49.5; 82.6	0.46 (0.11)	Moderate	0.89	n/a
Ocular discharge****	Stable 1: 0 = 14 1 = 1 2 = 0 Stable 2:	Stable 1: 0 = 12 1 = 2 2 = 0 Stable 2:	88.9	73.9; 96.9	0.29 (0.12)	Fair	0.64	n/a

	0 = 19 1 = 0 2 = 1	0 = 18 1 = 2 2 = 0						
Mould	Stable 1: 0 = 11 1 = 4 2 = 0 Stable 2: 0 = 12 1 = 10 2 = 0	Stable 1: 0 = 12 1 = 4 2 = 4 Stable 2: 0 = 10 1 = 12 2 = 0	75	57.8; 87.9	0.54 (0.14)	Moderate	0.8	n/a
Skin condition	Stable 1: 0 = 14 1 = 1 Stable 2: 0 = 13 1 = 7	Stable 1: 0 = 13 1 = 2 Stable 2: 0 = 14 1 = 6	69.7	51.3; 84.4	0.18 (0.17)	Slight	**	n/a
Coat condition*	Stable 1: 0 = 15 1 = 0 2 = 0 Stable 2: 0 = 20 1 = 0 2 = 0	Stable 1: 0 = 14 1 = 1 2 = 0 Stable 2: 0 = 20 1 = 0 2 = 0	97.1	84.7;99.9	0 (0)	Slight	**	n/a
Equipment chafing	Stable 1: 0 = 14 1 = 1 2 = 0 Stable 2: 0 = 20 1 = 0 2 = 0	Stable 1: 0 = 14 1 = 1 2 = 0 Stable 2: 0 = 20 1 = 0 2 = 0	79.4	62.1; 91.3	-0.1 (0.15)	Slight	0.44	n/a
Rug cleanliness*	Stable 1: 0 = 12 1 = 0 Stable 2: 0 = 21 1 = 0	Stable 1: 0 = 10 1 = 2 Stable 2: 0 = 21 1 = 0	93.8	79.2; 99.2	0 (0)	Slight	**	n/a