Lameness in pasture-based dairy cows (supplementary material): Infrastructure measurements - categorical scales

Details of the categorical scales used as part of the infrastructure measurements can be viewed below; including the overall condition of cubicles (Table 1), cubicle hardness (Table 2), cubicle cleanliness (Table 3), floor slipperiness (Table 4) and roadway surface condition (Table 5).

Table 1: Categories to determine the overall cubicle condition for each pen, described as the percentage of cubicles in disrepair (e.g. broken cubicles, torn mats etc.)

Category	Description
Very good	<5% of cubicles in disrepair
Good	<25% of cubicles in disrepair
Poor	25-50% of cubicles in disrepair
Bad	>50% of cubicles in disrepair

Table 2: Scale to categorise cubicle hardness. Cubicle hardness was measured using the 'knee drop test', as previously used by McFarland & Graves (1995). Cubicle hardness was measured for 5% of cubicles in each pen

Category	Description
Soft	Too painful to drop knees voluntarily – like concrete
Medium	Dropping to knees unpleasant but not painful – like foam or rubber
Hard	Pain free drop to knees – like deep bedding

Table 3: Cubicle cleanliness was measured for both the top half and the bottom half of each cubicle selected using a three-point scale. Cubicle cleanliness was measured for 5% of cubicles in each pen.

Category	Description
Clean	<25% soiled with manure
Partly dirty	25-50% soiled with manure
Dirty	>50% soiled with manure

Table 4: Floor slipperiness was measured at the parlour entrance and exit using a scale adapted from De Vries et al. (2015).

Category	Description
Not-slippery	Good grip on abrasive surface, cannot spin on foot easily
Somewhat-slippery	Some grip, can still spin on foot
Slippery	No grip, can very easily spin on foot

Table 5: Categories to determine the roadway surface condition. Surface condition was recorded at the half-way point and end-point between the collecting yard and paddock, and at the gateway, for the roadway in use of the day of the visit. Surface condition was also recorded within the segment between the collecting yard entrance and the fifty meters along all roadways utilized.

Category	Description
very smooth	Even surface, well maintained with no broken or damaged surface, no large rocks or signs of erosion
Smooth	Mostly even surface, no broken sections, occasional holes or bumps, may have signs of machinery use or erosion
Rough	Somewhat uneven, larger stones, bumps and holes are common, signs of wear or erosion
Very rough	Extremely bumpy and uneven, coarse and broken surface, many large protruding rocks and holes

References

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