

Risk Assessment Checklist

Name		Farm	
Contact no.		Email	
Visit Date		Visit Time	
Routine Vet			
	<i>Email</i>		<i>Mobile</i>
Consultant			
	<i>Email</i>		<i>Mobile</i>
Present at Visit			

About the Herd

Breed		Herd size	Adults:
Calving Pattern			Youngstock:
Milking Frequency	x1 x2 x3	Robots (av. visits per day___; no. robots ___)	
No. of Grps and size	Milkers:		
	Dry cows:		
Rear replacements?	Y / N / part flying herd – age purchased:		
Grazing Season			
Grazing Groups			



Complete appropriate sections based on record assessment/lesion map:

- Digital Dermatitis:** Success Factors 1 and 3 (Parts Two and Four)
- Sole ulcers/bruising:** Success Factors 2, 3 (Part Four) and 4 (Part One)
- White line disease:** Success Factors 2, 3 (Part Four) and 4 (Part Two)



SUCCESS FACTOR 1: LOW INFECTION PRESSURE

PART ONE: HYGIENE

Protocols

	Group	Milkers	Dry	Youngstock	
Automatic scrapers?					
Frequency of scraping					
Floor type (solid/slatted)					
Crossover passageways scraped?					

Assessment

How clean are the cows' feet? *The AHDB cleanliness score card can help assess this objectively.*

What is the consistency of manure? Is loose manure a particular problem leading to increased contamination and poorer foot hygiene? *Faecal consistency scores can be used here to provide an objective measure.*

How clean are the floors? *Walk everywhere the cows do paying particular attention to high risk areas such as the parlour exit and race during milking. Are there pools of slurry or dirty water? For example, due to broken concrete, poorly drained areas or over slats, at the end of scraper runs. Look for pools of slurry that are >4cm – ideally there are none.*

How well is slurry managed? *Consider if the scrapers are working effectively or if crossover passageways are missed. Are the automatic scrapers timed to run when there is least cow traffic?*

What is the overall area the herd has access to? *As a rule of thumb, for cubicle-housed herds, access to $\geq 7\text{m}^2$ floor space/cow (excluding cubicle beds themselves) is very good; $\leq 3.5\text{m}^2/\text{cow}$ is poor. For cubicle houses, 3 row designs vs 2 row designs often have less floor space unless loafing area is provided.*

What is the level of crowding in the shed? *Even if floor space is sufficient, poor design or poor cubicle comfort can lead to congested areas. Poor cubicle occupancy leads to high numbers of cows loafing in passageways or yards.*

Consider the collecting yard: how is this a risk for slurry contamination of feet? *Consider if there are narrow passageways e.g. parlour exit race, and if there is sufficient room of cows in the collection yard ($\geq 2\text{m}^2/650\text{kg}$ cow)*

What is ventilation like? *Consider how damp/humid the atmosphere is and if this is leading to damp beds and inability for feet to dry out.*

ADDITIONAL RESOURCE:

AHDB Cleanliness Score Card <https://ahdb.org.uk/knowledge-library/cleanliness-scorecard>

AHDB Dairy Housing – Ventilation <https://ahdb.org.uk/knowledge-library/dairy-housing-ventilation>



Is the herd closed and if not, are feet checked and treated as part of the quarantine measures? *For herds with no digital dermatitis, buying in is the greatest risk. Even if a herd has digital dermatitis, it is possible to bring in new strains when purchasing cattle.*

What biosecurity arrangements are in place for digital dermatitis? *Consider biosecurity between groups e.g. youngstock and adult cattle, boot dips and sharing of equipment between groups.*

What is the possibility of digital dermatitis spreading during foot trimming? *Consider how equipment is disinfected between cow and the precautions external hoof trimmers use.*

ADDITIONAL RESOURCES:

Reducing the spread of digital dermatitis by disinfection of hoof trimming equipment

<https://ahdb.org.uk/knowledge-library/reducing-the-spread-of-digital-dermatitis-by-disinfection-of-hoof-trimming-equipment>

Biosecurity advice and cattle purchasing checklist <https://ahdb.org.uk/knowledge-library/biosecurity-advice-and-cattle-purchasing-checklist>

PART THREE: FOOTBATHING



Protocols

Which groups do you footbath?	Milkers	Dry Cows	Youngstock (age:___)
Frequency of footbathing	Milkers:	Dry cows:	Youngstock:
What chemical do you put in the footbath?		% used	
How much chemical do you add?			
What volume of water is added?			
Type of footbath	Plastic	Concrete	Automatic Other:
Footbath dimensions	Length (cm):	Width (cm):	Depth filled to (cm):
Estimated bath volume (litres)	(L in cm x W in cm x D in cm) ÷ 1000		
Frequency contents changed		Prewash bath	Y / N

Assessment

How good is the cow flow? *There should be as little splashing as possible, and cows should walk through at an even, steady pace, with comfort. Permanent, level footbaths are preferable.*

How many times does each foot get 'dunked' in the solution? *Target= at least 2 per hind foot*

Is the solution deep enough? *Solution should cover the top of the feet (≥12cm deep)*

How easy it to empty/refill the bath? *The bath should be easy to fill, empty and clean otherwise it won't get done. Consider automatic baths.*

Are there appropriate H&S measures in place for both mixing and disposal? *If using formalin then is appropriate PPE being used when it is being handled and is copper sulphate is being used is it being disposed of correctly and consideration being given to copper build up on land.*

ADDITIONAL RESOURCE:

Designing your footbath using the footbath fitness test <https://ahdb.org.uk/knowledge-library/designing-your-footbath-using-the-footbath-fitness-test>



SUCCESS FACTOR 2: A ROBUST FOOT

PART ONE: GOOD HOOF SHAPE

Preventive Foot Trimming Protocol

Preventive foot trimming undertaken?		Yes	No	Sometimes:
If yes, when?				
Are heifers trimmed pre-calving?				
Who does routine trimming?	Staff member	Professional trimmer		
Are they qualified?	No	RAU Level 4	NPTC Level3	Dutch Diploma
What training have they had and how long ago?				
Frequency of visits		No. seen at visit		
What is the priority order for cows presented at each visit?				
Are there any concerns regarding trimming technique or are there cases of lameness following trimming?				

Assessment

<p>What proportion of the herd has long toes? <i>Use >9cm to indicate long toes for a typical Holstein, measure from where the hard horn begins at the coronary bank to the toe tip. Target <10% with long toes – more may indicate routine trims are missed.</i></p>
<p>What proportion of the herd have short toes? <i>Use <7.5cm to indicate short toes for a typical Holstein, measured from where the hard horn begins at the coronary band to the toe tip. Target = 0. Short toes may indicate over-trimming and/or over-wear.</i></p>
<p>Is foot angle normal? <i>Normal = approx. 52° If too steep it may indicate over-trimming and if too shallow the long toes or over-trimming/over-wear of heels.</i></p>
<p>Are thin soles a concern? <i>This can only be assessed through lifting the feet, however, short toes and steep foot angle is suggestive of a thin sole problem due to excessive wear and/or over-trimming or incorrect trimming.</i></p>

PART TWO: GOOD HORN QUALITY



How clean are the feet? *Assess how much caking is there on the feet e.g. due to sawdust and slurry. The AHDB cleanliness score card can help assess this objectively.*

What degree of slurry heel (heel horn erosion) is there? *Look for puffiness of the skin around the heels. Although slurry heel isn't normally a cause of lameness it is an indicator of poor hygiene conditions which will influence horn quality.*

Assess the horn quality. *Horn may be soft (due to wet feet) or too brittle (dry e.g. with excess copper sulphate or formalin use). If required, this can be assessed by examining some cows in the crush.*

Is foot angle normal? *Normal = approx. 52° If too steep it may indicate over-trimming and if too shallow the long toes or over-trimming/over-wear of heels.*

Are thin soles a concern? *This can only be assessed through lifting the feet, however, short toes and steep foot angle is suggestive of a thin sole problem due to excessive wear and/or over-trimming or incorrect trimming.*

Are there signs of horn abnormalities e.g. cracking of walls, stress rings on walls or curling of toes? *More than 3% of the herd affected with any one of these defects is abnormal.*

Is Biotin supplemented, if so how, for how long and at what rate? *The dose rate should be 20mg/cow/day, all year round.*

PART THREE: BREEDING/GENETICS

How is breeding for healthy feet considered on this farm?

How well does the type and size of cow suit the system and facilities?

ADDITIONAL RESOURCES:

AHDB Cleanliness Score Card <https://ahdb.org.uk/knowledge-library/cleanliness-scorecard>

AHDB Herd Advantage <https://ahdb.org.uk/knowledge-library/lameness-advantage-genetic-index-factsheet>

PART FOUR: BODY CONDITION SCORE



How many thin cows are there in the milking herd (BCS <2)? *More than 3% indicates a problem and may indicate that digital cushions are too thin for adequate protection. Use the AHDB Body Condition Scorecard to assess.*

How is transition cow management, in particular protection from rapid weight loss in early lactation? *Consider cow comfort in the dry period, feed barrier space and stocking rates in both dry and early lactation. Rapid weight loss will affect the quality of the digital cushion.*

What proportion of dry cows (pre-calvers) have a BCS ≤ 2.5 ? *More than 5% of cows might indicate that cows are calving too thin and are at risk from poor digital cushion protection.*

ADDITIONAL RESOURCE:

AHDB Body Condition Score Flow Chart <https://ahdb.org.uk/knowledge-library/body-condition-scoring-flow-chart>



SUCCESS FACTOR 3: EDPET

Lameness Detection

% lame (Scores 2 & 3)					
Mobility Scoring	Weekly	Fortnightly	Monthly	Quarterly	Annually
Who does mobility scoring?				RoMS	Y / N
If not RoMS, what training have they had?					
Other methods of lameness detection?					

Lameness Treatment

MAIN lesions causing lameness	SB SU WLD DD Other:
Lameness cases treated per week	
Who undertakes treatment?	
What training have they had and how long ago?	
How soon are cases treated? <small>Target <24hrs</small>	
Where are cases recorded?	
Can they determine in new/repeat case?	
Is there a special needs/recovery group?	

Treatment Protocols



Digital Dermatitis	
Sole bruising	
Sole ulcer	
White line disease	
Foul	
RECHECK PROTOCOL	

Equipment Assessment (In-house trimming/treatment)

Is the foot trimming crush suitable for trimming/treatment? *Consider its condition, ease of use, where it is situated (e.g. lighting) and if it is available at all times. Target: one person can get one cow in the treatment crush within one minute.*

Is all trimming equipment well maintained and fit for purpose? *Consider the condition of knives and whether they are in good condition and how they are sharpened.*

Where rotary rasps/discs are used, are they being used appropriately and by a competent person? *Consider whether the correct disc is being used and ensure training has been given.*



SUCCESS FACTOR 4: LOW FORCES ON THE FEET

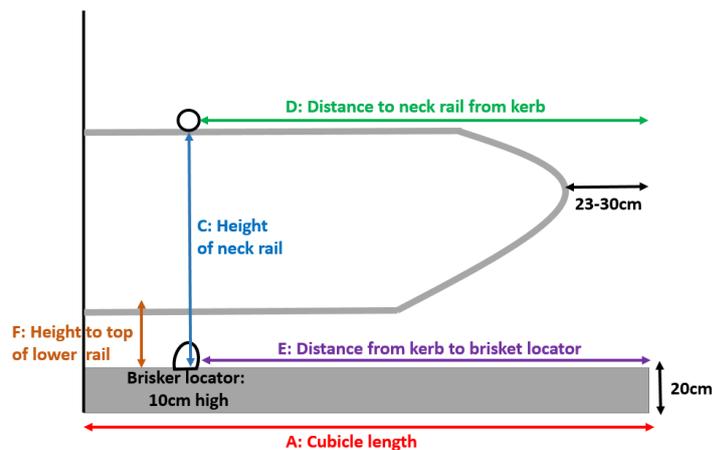
PART ONE: COW COMFORT

Housing Assessment

Cubicles. Group -

Complete for each group housed in cubicles

Number of cubicles		Max number using cubicles	
Bedding used		Frequency of bedding	
Cubicle surface	Matt Mattress Other:	Make	Age



	CUBICLE DIMENSION (cm)	Target based on Bodyweight (kg)			Actual
		545	636	727	
A	Cubicle length:	Head to Wall	274	274	305
		Head to Head	244	244	259
B	Cubicle width (measured from centre-to-centre of divider)	114	122	127	
C	Height from bed surface to bottom edge of neck rail	117	122	127	
D	Horizontal distance from rear edge of neck rail to edge of cubicle kerb:	Mattresses	168	173	178
		Deep beds	152	157	163
E	Distance from rear kerb to front of brisket locator	168	173	178	
F	Height from bed surface to top of lower rail of divider	25	31	31	

What is the cubicle comfort index? *Target ≥85% of cows in contact with a cubicle at any one time to be lying down*

How long does it take for cows to lie in a cubicle after entering? *Target ≤1 minute*

How comfortable are the cubicles? *Use the Six Principles of Cubicle Design/Comfort*



Size of loose yards		Total size of yards	
Bedding type		Frequency of bedding	

Further Assessment

How likely are lying times of 12-14 hours a day?

How many “waiting cows” are there (standing/not eating or drinking)? *Target ≤15% of herd at any one time; repeat the assessment ≥ 3 times per day or use automated activity meters/data loggers*

Have <10% of the herd got hock sores or swellings? *Use the AHDB Hair Loss and Lesions and Swellings Scorecards for a more objective assessment*

Consider the time budgets of the cow, how long are the cows away from beds e.g. milking, lock ups? *Target <3 hours per day. Milking time targets: 2 x day = <1 hour per milking, 3 x day = <50 minutes per milking*

ADDITIONAL RESOURCES:

AHDB Hair Loss and Lesions Scorecard <https://ahdb.org.uk/knowledge-library/hair-loss-and-lesions-scorecard>

AHDB Swellings Scorecard <https://ahdb.org.uk/knowledge-library/swelling-scorecard>

AHDB Dairy Housing Systems <https://ahdb.org.uk/knowledge-library/dairy-housing-systems>

AHDB Dairy Housing – Cubicles <https://ahdb.org.uk/knowledge-library/dairy-housing-cubicles>

AHDB Dairy Housing – Youngstock and Heifers <https://ahdb.org.uk/knowledge-library/dairy-housing-youngstock-and-heifers>

Six Principles of Cubicle Design/Comfort

<https://projectblue.blob.core.windows.net/media/Default/Dairy/Mobility%20Mentors/Six%20checkpoints%20for%20cubicle%20design%20checklist.pdf>

Dairyland Initiative – Adult Cow Housing <https://thedairylandinitiative.vetmed.wisc.edu/home/housing-module/adult-cow-housing/>



Cow Flow

Is there evidence of overcrowding? *Calculate the floor space (ideally $\geq 7\text{m}^2$ per cow plus beds)*

How evenly are cows distributed through the space and are there any pinch points in the housing area? *Consider if there are dead ends, sharp turns or other areas which could reduce cow flow*

How much space is there in the collecting yard? *Target $\geq 2.5\text{m}^2$ per cow*

How efficient is collecting yard management? *Consider whether the backing gate is used appropriately (target $< 2\%$ heads up) and if the milkers enter the collecting yard*

Are there any pinch points as cows move around the farm? *e.g. narrow passageways at parlour exit, holding pens, sharp turns into or out of the parlour, widening then narrowing of parlour lanes*

Is the feed barrier design suitable? *Consider if there is enough space for every cow to feed ($\geq 60\text{cm}/\text{cow}$) and if there is any evidence of poor barrier design e.g. neck rubs*

Are bulling cows removed from the herd?

Are bulls in the herd during the housing period?

How far do cows walk in a day (consider the maximum rather than average)? *Excessive walking can increase wear on the feet so consider how paddocks can be used strategically to reduce daily distance*



How relaxed are the cows? *Flight zones should be ≤ 1 metre*

How stress-free is the moving and collection of cows? *Consider if the cows can walk at their own pace or if they are forced through use of e.g. quad bikes, dogs, sticks*

If cows are out at pasture is a time-latch grazing gate used? *This means cows can come in at their own pace to the parlour*

What training is/has been given to staff on cattle handling?

ADDITIONAL RESOURCE:

Managing Lameness Through Better Stockmanship

<https://projectblue.blob.core.windows.net/media/Default/Dairy/Mobility%20Mentors/Managing%20lameness%20through%20stockmanship.pdf>



Is the floor slippery – is there adequate grooving? *Go everywhere the cows go and evaluate how confidently they walk*

Are there any areas of abrasive or new concrete? *These will increase wear on the feet*

How well maintained are the floor surfaces? *Look out for sharp edges, broken concrete/slats or cracks*

Are there stones being dragged onto concrete collecting yards/tracks?

Are high risk areas rubber-matted and is this fit for purpose? *High risk areas would include the top of the collecting yard, parlour exit and any turning areas. To be effective rubber matting must be at least 2.5cm thick for the cow to achieve grip*

**Track width: How wide are the cow tracks, starting at the nearest point to the parlour and along the route to field and are there any pinchpoints?**

Ideally watch cows as they are herded and assess how they use the track along its full length. As a general rule of thumb, cow tracks should be at least 5m (16feet) wide for herding in mobs, increasing to over 6m (20feet) for large groups. Tracks wider than 6.5 m would be recommended for large herds (>450 cows), particularly as they enter the track adjacent to the dairy. The track should have a gentle 5% camber to a crown in the centre. Steep cambers can effectively reduce the track width to single file on the crown. See Table 1 for a guide to cow track width.

Dedicated cow track: How much vehicle use do cow tracks get through the grazing

season? *Vehicles will increase track deterioration and introduce loose stone hazards to cow tracks. Dedicated tracks perform better than multipurpose tracks. Posts in the centre of tracks at either end can deter mistaken use by tanker drivers and other tractor activities.*

Track surface: What materials cover the surface of the tracks and are they suitable for

cows? *Tracks designed specifically for cows will save time and prevent lameness. Tracks which have to serve heavy vehicle use will need to be built for tractors and not cow comfort. Furthermore, they can introduce stones and rough surfaces unsuitable for cows. For a list of the most suitable cow track surface materials, see Table 2 of the guide.*

Track drainage: Where are the areas of the track most prone to water pooling, mud or

water erosion? *Water will erode and destroy tracks. Stones and moisture are a risk factor for lameness. A 5% camber will help tracks shed water to side-ditches. On steep slopes, drain channels or "sleeping policemen" can help divert water to side-ditches. Wind and sun drying can help reduce surface water. Keeping hedges cut and side-ditches clear will also help. Tracks need maintenance in the spring before turn-out.*

Track length and direction: How far do the cows have to walk (at most) in one day?

The further cows have to walk, the higher the risk. A simple way of minimising distance walked is to plot track routes in a straight line, breaking fields into grazing blocks. This also removes bends (bottlenecks) and can increase syn/wind drying. Using close paddocks for night-time and further paddocks for day time (or vice versa) can also cut daily walking time.

Fetching cows: How quickly are cows fetched from fields?

Allowing cows to slowly "drift" in and out from fields will reduce the incidence of foot injuries. If cows are rushed, they are more likely to tread on stones or end up in a conflict with a dominant cow.

Gateway condition/rotation: How many different unpoached entry points are available for each field?

Poaching of gateways will depend on a lot of factors including cow traffic, recent rainfall, drainage. While climate cannot be managed, other elements can be.

Watertrough access/condition: How many water trough areas are available per field and what condition are they?

As for gateways, poaching of areas around water troughs will depend on climate, cows and how many access points there are. While climate cannot be managed, other elements can be.



Steep slopes: how much exposure to steep (>10%) slopes are there? *According to the opinion of New Zealand vet Neil Chesterton, cow flow is better with steps (10-15mm riser, tread length according to space - see link below). Cows will tolerate steep slopes (up to 20% according to Neil) but underfoot conditions can easily become slippery. Steep slopes with rough surfaces can increase wear and trauma.*

Other specific problem areas: What other specific pinch points are identifiable on the cow tracks? *The other points to consider include the junction between track and concrete, which can erode more quickly; ways to reduce stones being dragged onto concrete yards from tracks (timber step-bar, foot baths, rubber aprons, pine peeling junctions), holding points on tracks, use of tarmac roads, steep slopes and water troughs along tracks causing bottlenecks*

ADDITIONAL RESOURCES:

AHDB Cow Tracks <https://ahdb.org.uk/knowledge-library/cow-tracks>

Neil Chesterton – Slopes and Steps <http://www.lamecow.co.nz/pdf/slopesandsteps.pdf>