HEALTHY FEET PROGRAMME

AHDB
AGRICULTURE & HORTICULTURE DEVELOPMENT BOARD

Cow tracks

DAIRY

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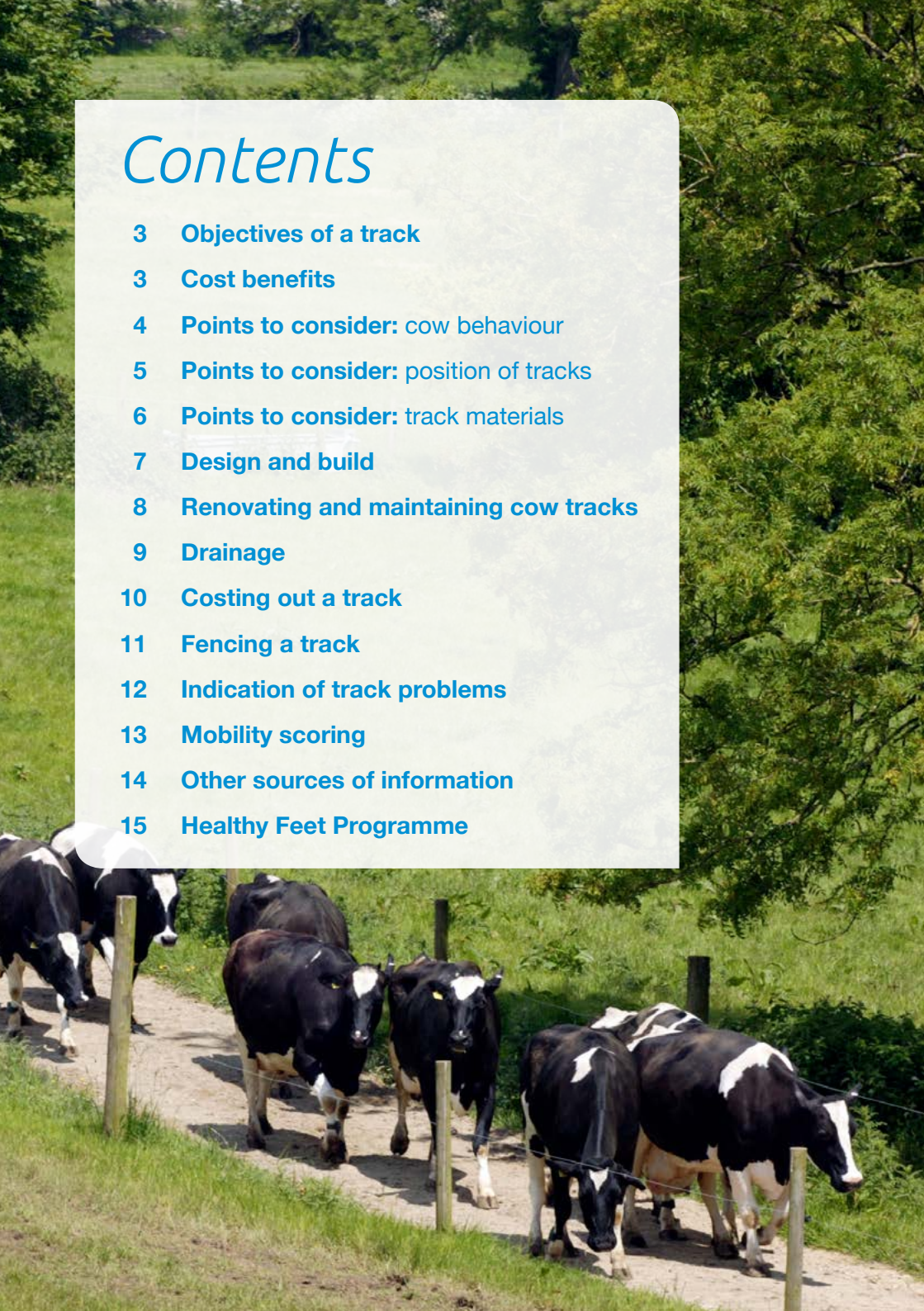


Objectives of a track

- **Improve cow flow and reduce herding time**
- **Allow cows to travel comfortably and easily over considerable distances from the parlour**
- **Minimise damage to claws with the view to minimising lameness**
- **Reduce field poaching and compaction (with a positive reduction in environmental impact)**
- **Extend the grazing season (through better field access)**
- **Improve udder hygiene (cleaner cows)**

Cost benefits

The cost benefit to the business of installing tracks can be assessed by calculating the number of weeks grazing that may be gained at the start and end of the season, taking into account savings in conserved forages, scraping out and bedding, for example. There may also be benefits in terms of general herd health through having greater control over when cows can be turned out and housed. Benefits which may be seen include improved foot health, udder health, labour savings and a minimising of sudden dietary changes.

Points to consider: *cow behaviour*

Cows walk and stand with their heads down:

Given space for their heads to move up and down freely, cows will find safe foot placement, allowing them to avoid cows of a higher dominance and respond to pain if they stand on a stone. If cow's heads are up, either on the track or in the shed, it is because they are too tightly packed.

Action: Cows need space. Don't force cows to bunch up tightly on the track or in the milking shed.

Cows have a pecking order:

Cows have a **walking order** that is slightly different to their **milking order**. After entering the collecting yard, cows need time to rearrange themselves before they enter the parlour.

Action: Cows need space and time to rearrange their position in the herd before entering the parlour.

Dominant cows set the walking speed of the herd:

Pressure on the cows at the rear on the track or by the backing gate causes the rear group to compact because they won't overtake the dominant cows in front of them. The front cows are almost unaffected and so don't walk any faster – they continue at their own speed.

Action: Don't put pressure on cows at the rear of the herd

Cows follow the leaders – their movement is forward:

Under pressure, lower dominance cows and heifers reverse out of tight spots, so a cow reversing indicates too much pressure.

Action: Increase the distance between the herdsman and the herd on the track.

Number of cows in the herd	Minimum width of the track (surfaced)
200	4m
300	5m
400	6m
500	7m

Always allow for any expansion plans you may have for the herd – it is easier to increase the number of cows than to increase the width of the track.

Points to consider: *position of tracks*

- The general layout of the farm should be evaluated before selecting the route of the track
- Start with a farm map and plan the ideal position of tracks, which may then be installed over a few years
- Does the track need to service all areas of the farm? Take cropping patterns into consideration to maximise the use of the track
- A 5m track of which 4m is surfaced will enable good flow for up to 200 cows. Each additional 100 cows would require an extra 1m width
- Tracks should, if possible, not be in hollows as surfaces will require more maintenance
- Avoid tracks in heavy shade if possible (ie a south facing side of a hedge is better where there is a choice)
- Is the proposed track on flat land or on a slope; the gradient may determine the type of surface used. On sloping land follow contours wherever possible
- The maximum gradient for a track with a loose surface can be up to 12% but ideally no more than 8%
- The track should be designed and planned to run the shortest route from A to B to save materials (in some cases this may be directly through the field)
- Distance walked per day must be factored in – the greater the distance the more energy used – the less available for milk production
- Siting of fences alongside the tracks needs to allow for cows to use the full width of the track
- Tracks should not have sharp turns or areas which narrow as this may cause bottle necks
- If the track is to run near a river, seek advice from the Environment Agency (EA)/SEPA. EA/SEPA must be consulted for works in, over, under or adjacent to rivers
- Check with landowner and/or local authority with regard to planning issues relating to construction of tracks, as materials used may have an effect on permissions needed
- New tracks should avoid areas of wildlife interest and should also avoid sites of archaeological or historic importance. Check if any consents are needed
- Where possible tracks should be sited alongside field boundaries rather than direct across the middle of a field
- EA or Internal Drainage Board (IDB) consent may be required for any track sited adjacent to a watercourse; maintain a suitable buffer between the track and any watercourse

Ideally, visit several different farms with cow tracks to see how they are working in practice and how they could be modified for use on your farm.

Points to consider: *track materials*

Cows walk better on softer surfaces but consider the following:

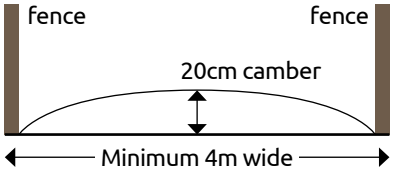
- The gradient of the track
- Weather conditions
- Disposal if no longer required
- Tracks should be for cows only

In terms of surfaces, there are a number of options to be considered. These include solid surfaces, such as concrete or concrete railway sleepers, through to softer surfaces, such as woodchip, sand, limestone dust and numerous commercial named products. It may be possible to use either an on-farm supply of stone or waste building rubble in the base of the track.

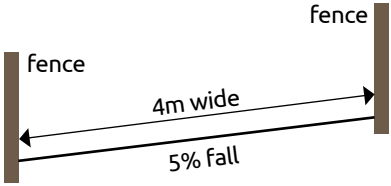
The classification of some of these materials as 'waste' may have a bearing on the permissions needed for use.

- Please contact the Environment Agency before starting to build your tracks to apply for the relevant waste exemption licence, for most cases it will be U1 – Use of waste in construction. Example activities for a U1 waste exemption licence include:
  - Using crushed bricks, concrete, rocks and aggregate
  - Using road planning's and rubble to build a track, road or car park
- If using sleepers they should be placed directly onto topsoil rather than digging into a trench
- If using sleepers there is no need for a crossfall on the track
- The use of a geotextile membrane to create a barrier between the topsoil and the track material should prevent large stones and mud from rising to the surface. This will increase the life of the track
- Track material should be free from material of a size and shape which can be trapped between the claws – any bought-in materials should be screened for metal, which has the potential to puncture and damage soles
- Potential surface materials include:
  - oolitic limestone laid with a vibrating roller in 2 inch layers (following wet weather to aid compaction)
  - sandstone
  - chalk – to which sand may be added to reduce the risk of cows slipping
  - crushed stone or rubble – commercial crushers can be contracted in. The stone can be stabilised with cement if required
  - woodchip
  - stone dust
- It is worth noting the abrasive property of concrete on hoof when herds are walking long distances on tracks

Design and build



A diagram showing a cross section of a track using the proud crown design with a camber appropriate for this width of track.



Design of a track showing the location of fencing to ensure cows have access to the full width of the track and taking advantage of the natural slope for drainage.

- For new cow tracks, it is not necessary to first strip off topsoil, unlike a machinery track
- If a compromise on the length of track needs to be made, the length nearest to the field opening could be left as grass only, as passage will only be twice every 21 days at most
- The stretch that leads to the parlour/yard may need to be of a more substantial material but beware the potential for transfer of stones from the track onto concrete which, in turn, increases the chance of sole damage
- Tracks sink over time so it is important to build them up well at the start
- Build the body of the track in 150mm layers and use a method of compaction which will increase durability and lifespan of the track
- Use a vibrating roller to increase durability and lifespan
- The camber should be 3-6% (maximum 10%), be free-draining and exposed to the wind/sun for quick drying
- Fences should be placed so they do not interfere with maintenance tasks nor affect the cows that choose to walk along the edge of the track
- Make edges steep in ditches – this should prevent verge formation
- If necessary, and to aid drainage across sections of the track, cross drains should be constructed to drain into existing drains on the edge of the track. It should be ensured that this run-off is diverted off the track and not onto other low areas in the track and/or into water courses
- The installation of cross drains or sleeping policemen is essential on sloping tracks where run-off is an issue or where a track leads onto a highway. Such drains could be linked up with a sediment trap to prevent excess runoff from contributing to localised flooding

Renovating and maintaining cow tracks

Maintenance of tracks is crucial for them to perform as expected in terms of cow flow and cow comfort.

- Top or cap the surface with fine stone or a soft organic material. Mechanically crushed stone is a good replacement surface
- Always ensure that the new surface has been compacted using a heavy vibrating roller to remove rough edges and build the required camber into the surface. A specialist machine to do this is available; this consists of a heavy-duty rotavator, followed by a machine to build the camber or appropriate fall across the track. This should then be followed by a heavy vibrating roller
- Should the original track be made from wood chip then it is important to understand the importance of proper drainage and suitable fencing along the sides of the track to prevent soil contamination
- Problem areas, such as gateways should be identified and options, such as rotation of field entrances and exits or wider openings should be considered

Drainage

Drainage is critical to ensure the track surface does not deteriorate or allow pooling to occur. Looking at position, camber and drainage is essential in planning a track. Design is crucial in reducing runoff and preventing the tracks acting as pathways for run off into a watercourse.

- There must be either a crossfall of 150mm on tracks less than 4 metres wide or a camber of between 3–6% on wider tracks
- Keep the camber convex to shed water along the whole track rather than in one or two areas
- If necessary, and to aid drainage across sections of the track, cross drains should be constructed to drain into existing drains on the edge of the track. It should be ensured that this run-off is diverted off the track and not into water courses
- Cross drains need to be regularly cleaned to ensure they continue to divert water off the track
- Water must not be allowed to run along the tracks nor remain on the surface, standing puddles tend to erode and in time destroy the surface of the track
- Verges along tracks will build up over time. These need to be removed on an annual basis to ensure the free movement of water off the track
- Improvements to the track should also be considered in terms of clearing of overhanging greenery and clearing of ditches, which in turn could lead to the greater longevity of the track as weather damage can be minimised while the ability of the track to “dry” is increased by improved exposure to sun and wind

Costing out a track

When looking into tracks, a true costing of materials should be carried out.

- Calculations should be done on the quantities of material required to achieve the width, depth and length of track. This allows a 'true' costing of the different materials to be done, as a "cheap" load of materials may turn into an expensive track if the quantity and maintenance regime of the track are not considered from the outset
- If using chalk, sand, rubble or shale, ensure the correct grade of material is quoted for, as variance across grades in some instances is quite marked
- Remember to allow for the transport, labour and machinery that may be required to produce desired design
- The mode of fencing alongside the track should also be taken into account

As a rule of thumb, a m² of track would need a tonne of material.

Fencing a track

- Single strand high tensile electrified wire fencing should be sufficient to keep stock secure, provided the current running through it is maintained
- Ensure there are plenty of entry and exit points to all paddocks – this will allow a different opening to be used for the cows entering and exiting the paddock
- The laying of plastic pipe, to act as ducting, under gateways while building the track will allow the fences to be electrified from a single point
- Use of temporary fencing such as coil springs with insulated handles can allow for more entrances and exits as opposed to using gates
- A second wire lower on the posts can be fixed to allow the paddock to be grazed by youngstock
- Ensure water troughs are not sited alongside the track as this will slow down the movement of the cows and has the potential to cause damage to the track surface

Indication of track problems

- High or rising lameness during grazing period
- High levels of sole bruising, foul in the foot, white line disease or sole damage that can be linked to stone damage during track usage
- Ridges and gullies forming on the track provide evidence of water run-off and erosion
- Bottlenecks in cow flow during herding
- Cows raising their heads during herding
- Cows jostling for position and therefore pushing against others in the herd
- Excessive dunging in certain areas of the track
- Cows tend to walk along the verges or in single file
- Cows walk slower than 3 miles per hour on the track

"A track is as good as its performance on its worst day in the worst section – management of the track is key"

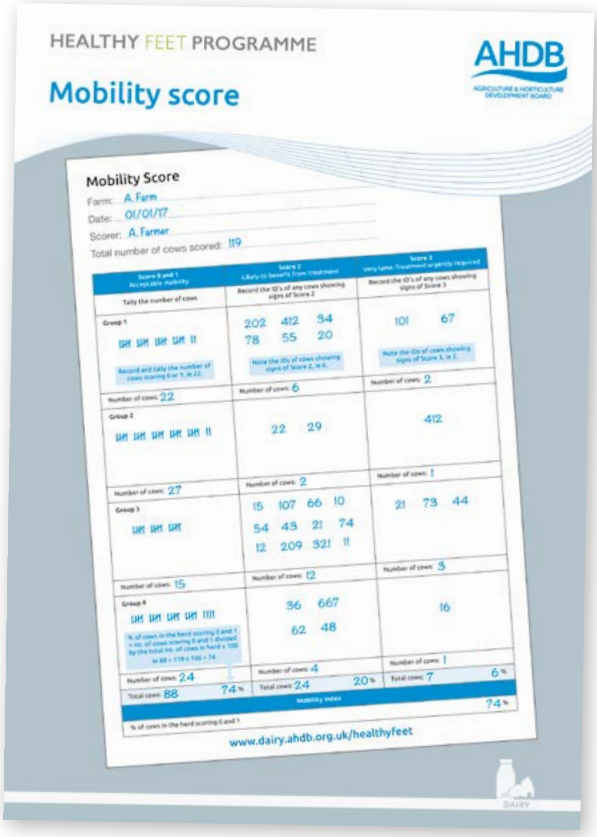
Mobility scoring

A suitably placed cow track can be the ideal place to score the herd as they go out to/come in from pasture in terms of their mobility.

This will give both an indication of the track's performance as well as the herd's mobility.

Regular scoring can help identify cows in the first stages of a lameness problem, coupled with early effective intervention; this can have a positive effect on reducing the prevalence of lameness in the herd.

The AHDB Dairy Healthy Feet Programme looks at the effectiveness of cow tracks and the way the herd uses them as part of the on-farm assessment.



To find out more about the programme please see **www.cattle-lameness.org.uk** or **ahdb.dairy.org.uk/mobility**

Other sources of information

dairy.ahdb.org.uk

dairy.ahdb.org.uk/cowtracks

dairy.ahdb.org.uk/cowtracks/factsheet5

www.sepa.org.uk

www.netregs.gov.uk

www.ada.org.uk/member_type/idbs

www.gov.uk/guidance/register-your-waste-exemptions-environmental-permits

Environment Agency Agricultural Waste Helpline: **0845 603 3113**

HEALTHY FEET PROGRAMME

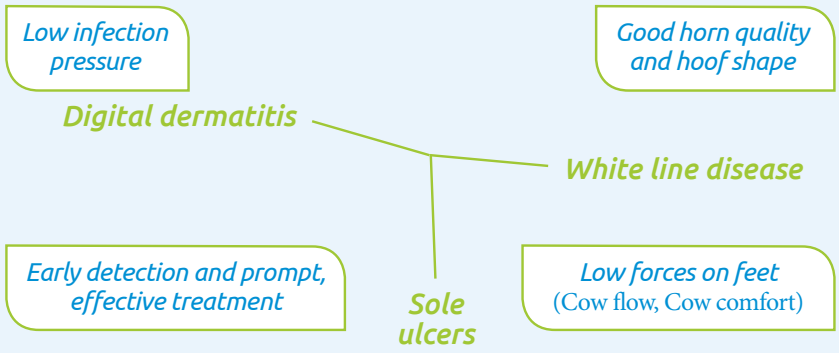
The AHDB Dairy Healthy Feet Programme (DHFP) aims to help dairy farmers reduce the number of lame cows on their farms by identifying and applying the right management techniques.

The Healthy Feet Programme is a structured approach which will help dairy farmers make important progress towards diagnosing the problems, devising an action plan, and develop the skills necessary for long-term lameness control. Trained providers (vets or foot trimmers who have attended a specialist course) facilitate the whole process and act as one-to-one advisers, or 'mobility mentors'.

The Healthy Feet Programme is based around four key success factors:

1. Low infection pressure – foot bathing and slurry management
2. Good horn quality and hoof shape – foot trimming
3. Low forces on the feet – good cow flow and cow comfort
4. Early detection and effective treatment of lame cows – facilities, confidence and competence of staff and mobility scoring

Lameness map



The delivery of the one to one service is between the mentor and the producer, whilst resources and information is provided by AHDB Dairy to aid with understanding and actions. To find a mentor in the local area see the mobility mentor map.

Further information on the Healthy Feet Programme visit:
www.cattle-lameness.org.uk or **dairy.ahdb.org.uk/mobility**

For more information contact:

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