Foot trimming – The 5 step Dutch Technique

By Nick Bell

Good trimming method will save cows time and money

• More effective treatments means
  – Faster recovery
  – Less medicines
  – Recovering cows perform better
  – Fewer re-treatments
  – Fewer casualty cows
  – More job satisfaction, better welfare
Preparation

• Good record sheet
• List of locomotion scores (or a way of watching each cow into the crush)
• Kit in good order
• Treatments
  – Blocks
  – Bandages
  – Antibiotic spray
  – Copper sulphate/copper gel

Minimising adverse affects of foot trimming

• Trim small groups of cows to minimise time cows wait
• Start during or straight after milking
• If cows are due for drying off, trim 1 week ahead of drying off date (reduces stress and reduces risk of mastitis)
• Provide food, water and lying space
• Provide clean, dry yards for holding and dispersing
Good kit - the difference between a difficult and easy job

• Good quality knives – Hauptner produce knives from top quality steel
• Left and right handed knives – SHARP – Ed Malt will sharpen knives (01362 820254 - £2 per knife)
• Sharpening tools – modified grinding stone
• Nippers – diamond edged
• Hoof testers
• Good crush and handling facilities

Foot Crush

• Essential to have
  – Belly band (preferably wide)
  – Gripped floor (preferably with rubber)
  – Front foot blocks
  – Level side to side
• Quicker if
  – Hind limb winch
  – Open access to hind and front feet i.e. no hind foot ties
  – Hinged gates on the rear of the crush
• A level surface is best but some crushes work best pointing slightly up hill, others slightly down hill.
Human comfort and safety

- Good cow flow – holding pen with race and obvious exit route for the cow to see
- Permanently placed (bolted to floor for safety as on rare occasions they tip over)
- Under cover
- Good lighting
- Protective clothing

Cow comfort

- Rubber mat on floor
- Straw or sawdust in crush
- Wide belly band
- Lame leg first – other leg next week if she’s very uncomfortable
- Standing square – adjust her stance if she isn’t
- Fasten strap so it doesn’t tighten on itself (loose like opposite)
- Don’t lift leg too high (unlike opposite) – expect to bend you back to preserve the joints of the cows
IAE Dairy Master Crush

- Yoke incorporated in front gate, adjustable neck yoke allowing 4 settings for widths from 145mm and 230mm. Baffle plate on yokes eliminates leg traps, rope operated, from rear of crush, quick release.
- Designed to give easy access for all tasks. Rear drop down timber floor extensions to help prevent animal from rocking crush with rear feet. Fully opening front side gates allowing access to animals flanks. Foot trimming equipment including adjustable belly strap, geared foot winch c/w rear roller and 2 adjustable front blocks.
- Rear side gates optional extra.
- Length 1960mm, base length 1905mm, width 838mm, internal width 738mm, height 2050mm, weight 302kg.
- Any IAE supplier (pictures supplied by Brian Llewelyn 01239 891618)
- Cost approximately £1400 before delivery and VAT

WOPA box

- Model SA0022 with geared winches but you should request:
  - Wide belly band £20-30
  - Rubber floor £50-120
  - Hinged steel gates on rear £290
  - Front blocks inches £192-207
- Cost approximately £1785 before delivery (£100) ex vat
- Available from Ed Malt 01362 820254 / fax 821361
Clean, hygienic feet, kit and conditions underfoot

- Clean feet with sawdust or disinfectant to inspect and treat lesions
- Bed up the crush
- Do not allow cows to walk through slurry into and out of the crush
- Keep your kit clean and disinfected between cows

Anatomy

- Heel – slowest point of growth or fastest point of wear
- Toe – fastest point of growth or slowest wear when housed
- Wall – hardest horn
- White line – weakest horn
- Sole – needs to be at least 8mm thick to withstand bruising and stone penetration
5 Principles

1. Correct toe overgrowth to correct foot angle
2. Spare the heel, leave sole thickness
3. Allow the walls to bear most weight, take weight off the sole ulcer site
4. Remove weight from painful claws
5. Remove dead or diseased horn

Horn at the toe grows at about 0.5cm per month
Variations in growth produces laminar rings

- If growth stops completely this results in “thimbling”. This usually follows severe illness.

Length of toe

- Hand width is approximately 8cm
- Measure to check and use this as your guide to accurate toe length
Use Rizla papers or a block cut to size if you are unsure

Length – inner hind claw

- Pushing fingers up between claws measure a hands width from top of inner hind claw
- Using nippers, make a perpendicular cut across inner claw to 8cm
- If you detect problems between the claws with your fingers, make a mental note to go back to this
Length – outer hind claw

- Bring claws up together by placing fingers across the toes
- Cut outer hind claw to match length of inner
- Make cuts perpendicular to length of claw

Watch out for curling toes – be more cautious with first cut
Levels – trim soles, leaving 5-7mm step at toe (thickness of sole) and SPARE THE HEEL

Spare the heel
Check levels

Levels - match outer claw to inner

Picture courtesy of Steve Borsbery and Mark Burnell
Check levels

• Use the knife handle
• Place across the heels where the white line ends
• Assess levels across the outer points of each heel

Balanced weight bearing

• Ideally weight should be balanced across inner and outer claws across the heels
• Occasionally there may be an underdeveloped claw – avoid over trimming the heel to create balance between claws

Level at 2 points of contact on outside heels
“Modelling” – dishing out the sole ulcer site, avoiding the front 3rd (toe)

Is there a painful claw – relieve weight

Trim down heel or apply block to a SOUND claw
Note – a sound claw must not have black lesions
Applying blocks

- Only apply blocks to healthy claws
- Check the size of the block before glueing
- Place the block over the heel so the weight bearing part of the heel is covered
- Mould glue to avoid any sharp ledges
- Check the block will land flat on the ground while the cow walks

Remove loose horn but avoid digging in the toes
Summary

- Step 1 – length of inner claw (hind) 8cm, toe trimmed to >5mm
- Step 2 – level opposite claw, sparing heel
- Step 3 – model
- Step 4 – relieve weight on painful claw
- Step 5 – remove loose horn and sharp edges

Approaches to specific foot lesions

- The following groups of related foot lesions are covered:
  - Sole overgrowth, Sole bruising, Thin soles, Sole ulcer, Heel ulcer, Toe ulcer
  - White line separation, white line abscess, wall ulcer, foreign body penetration, stone damage, interdigital growths
  - Heel erosion, digital dermatitis, foul-in-the-foot
  - Heel fracture, underrun, thimbling
Sole overgrowth

- Correct trim will model out overgrowth
- Look for under-run at the inner heel of the affected claw – sometimes this will lead you to a sole ulcer

Sole ulcer

- Relieve the weight on the affected claw or if the other claw is healthy, apply a block
- Remove the collar of horn
- Be hygienic
- Spray with antibiotic or copper gel
- Consider a short course of injectable antibiotics and pain relief
- DO NOT REMOVE THE MUSHROOM – this may create a scar that will never heal
Sole ulcer

Diagram courtesy of Steve Borsbery and Mark Burnell

Remove the collar - “rest” the ulcer

Sole bruising and thin soles

- Corrective trim
- Care not to make matters worse by making soles thin
- Consider ways of reducing standing times on concrete and hardening horn
- Blocks can be applied to both claws of an affected foot, provided claws are healthy
Heel ulcers

- More midline than sole ulcers
- Treat like a sole ulcer

Toe ulcer

- Usually due to over trimming or sharp/new concrete
- Block the healthy claw
- If due to new concrete, correct the problem and formalin foot bath the herd (not the cows with open sores!)
**White line disease**

- Drain pus
- Pare out to allow good drainage
- Cut away dead horn
- Use sharp knives to avoid cutting into the quick and creating a wall ulcer

**White line abscess**

- Pus from infections that have tracked down the white line
- Start with a functional trim
- Then remove the diseased tract in the white line using a sharp knife
- Ensure a drainage hole is made that will not block easily
- Keep the cow in clean conditions i.e. ideally a nursing paddock or a clean, dry, regularly scraped yard
- If a straw yard is used, apply a poultice and bandage in place, removing after 1-2 days
Wall ulcers

- These are Chronic white line infections probably caused by one of the following:
  - Delayed treatment
  - Infection with digital dermatitis or other bugs from environment or dirty knives
  - Constant irritation from wet, sandy or slurry contaminated conditions (especially in automatic scraper situations)
  - Scarred quick
  - Impaired healing capabilities
- Recovery may take many months and involve bandaging and nursing in clean straw yards

Interdigital growths

- Ask your vet for advice – many respond to bandaging with copper sulphate
- Your vet may opt to:
  - Surgically remove
  - Freeze out
Stone damage

• Remove stones with the back of the knife or a small pick
• Scallop out the indent to prevent more stones becoming impacted
• Open any tracks with a very sharp knife

Heel erosion

• Due to slurry, bugs found in slurry and wet conditions
• Eroded heel should be removed, preserving as much healthy horn as possible
• Soft horn, prolonged standing in deep slurry and loss of heel horn can be associated with sole ulcers
Digital dermatitis – ulcerated form

- Thoroughly and hygienically clean the foot, gently removing scabs and crusts
- Dry the lesions
- Lesions are normally very responsive to 3 generous applications of:
  - Antibiotic aerosol (licensed treatment)
  - Copper gel (Hoof fit or Teison)
  - Injectable antibiotic e.g. cephaguard or oxytetracycline
  - Other antibiotics under veterinary instruction (as off-label) e.g. cephaguard lactating tubes, lincopecting powder, erythrocin powder, oxytetracycline powder, tylan powder
- Return to clean, dry conditions

Treating when standing

- Occasionally it may be easier to treat the animal when standing
  - Thoroughly wash the foot off
  - Allow the foot to dry
  - Apply generous amounts of treatment and mark the cow for repeat treatments
Digital dermatitis – hairy form

• This is the chronic form – cases persist for prolonged periods
• These act as a reservoir of infection for the rest of the herd
• Consult your vet who may advise:
  – Cutting back under local anaesthetic
  – Bandaging with antibiotics or copper sulphate
  – Freezing
  – Culling

Foul-in-the-foot

• Due to bugs shed from the gut
• May require a combination of bugs to cause full blown infections
• Usually triggered by wet conditions, abrasive materials in the environment and a drop of immunity following calving
• Lift affected feet to check the interdigital space
• Apply aerosol antibiotic or copper sulphate gel/crystals
• Inject with antibiotic as advised by your vet (Excenel or penicillin usually)
Rotten toes

- Stinking and deep toe infections caused by a mixed of bugs, likely to include the bugs that cause digital dermatitis
- An indicator that digital dermatitis is not fully controlled
- Seek veterinary advice
- Remove all the diseased horn (your vet can help with local anaesthetic)
- Bandage with lincospectin or tylan powder for at least 3 days (new bandage daily)
- Consider injectable antibiotics and pain relief
- Apply a block to the healthy claw
- Nurse on clean straw yards
- Consider culling or other salvage procedures

Heel fractures and under run horn

- Cause imprecise—probably a severe interruption to horn growth
- Heel fractures usually affect the inner claw of the hind feet
- Can trap dirt and stones, later becoming infected
- Underrun horn should be removed once the first 3 steps of foot trimming have been complete and other causes of lameness have been ruled out
Thimbling

- A severe interruption of horn growth, usually following a period of sickness
- The thimbles are usually partly attached to the quick
- Keep removing loose parts of the thimble that may be pulling on the quick

Nursing and after care

- Increase lying time
  - Nursing group (paddock, straw yard, deep sand cubicles)
  - Reduce standing for milking (smaller milking group, once a day milking, dry off early)
- Keep lesions clean and dry
  - Nursing group
  - Bandage every 2-4 days
  - Block
- Re-examine and treat as necessary
- Relieve pain
  - Anti-inflammatory painkillers (e.g. ketofen)
  - Blocks
Hock damage

- There is a correlation between hock damage and lameness
- Cows with sore hocks are less likely to lie in normal patterns
- This is likely to induce foot lameness
- These cows should be put in a straw yard for a couple of weeks and provided with antibiotic cover

Common mistakes
Over trimming the toe

- Large numbers of toe ulcers mean cows are over trimmed or walking conditions are sharp/abrasive
- The toe should feel solid to thumb pressure
- You should not be making cows bleed at routine trimming (some cows with sole ulcers and deep infections may bleed following treatment)

Leaving flat soles

- Under pasture conditions, cows have naturally hollowed out soles and bear weight on the heels and walls (opposite)
- Injury from concrete yards triggers extra growth, particularly at the sole ulcer site, much like calluses
- Calluses become like bunions – they trigger more overgrowth
- The cycle is broken by modelling out at corrective foot trimming
Removing healthy wall

• The wall is the hardest part of the hoof and should be preserved whenever possible

Avoid trimming this horn unless extremely flared

Avoid trimming wall here unless there is a painful or infected track

Applying blocks to diseased claws

• This will trap infection and exacerbate lameness.
• This can lead to disaster, as severe disease in both claws in one foot usually results in a casualty cow
• Use a straw yard or nursing paddock instead of blocking (deep sand cubicles may be ok)

Disease here prohibits use of the block
Using blocks too small for the claw

- A block too small for the claw will result in cow rocking back on the block and irreversibly damaging tendons
- Major problem with cow slips
  - they come in 3 sizes and largest size is most flexible
  - Toes can be removed to allow better position
- Wooden blocks are better for fitting to different sized claws
- Don’t be tempted to cut the claw to fit the block – once the block is removed the claw will be more prone to bruising

Leaving bandages on for more than 3 days

- Bandaged can do more harm than good if left on for more than 3 days
Summary

• Regular foot trimming should be done using a 5 step approach
  – Length
  – Level
  – Model
  – Relieve diseased claws with trimming, blocks and other treatments
  – Remove loose horn and sharp ridges
• Minimise the chances of doing more harm than good - attend regular foot trimming courses and refresher courses
• If in doubt, ask advice from your vet