

Theme 10: Hoof care

FIVE STEP PROTOCOL FOR HOOF TRIMMERS (Level 3)

Topic	Training & information Content
10.1	Hoof diseases and hoof care management
10.2	Five step protocol for hoof trimmers



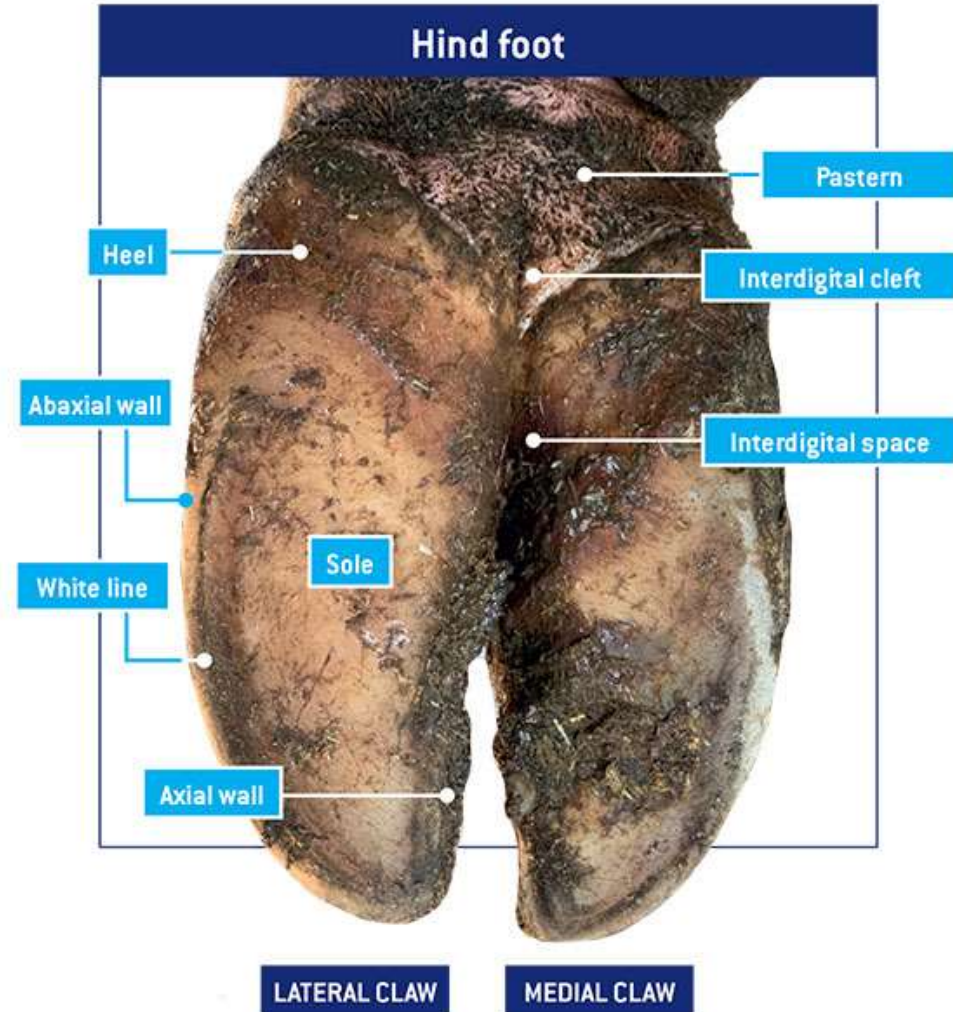
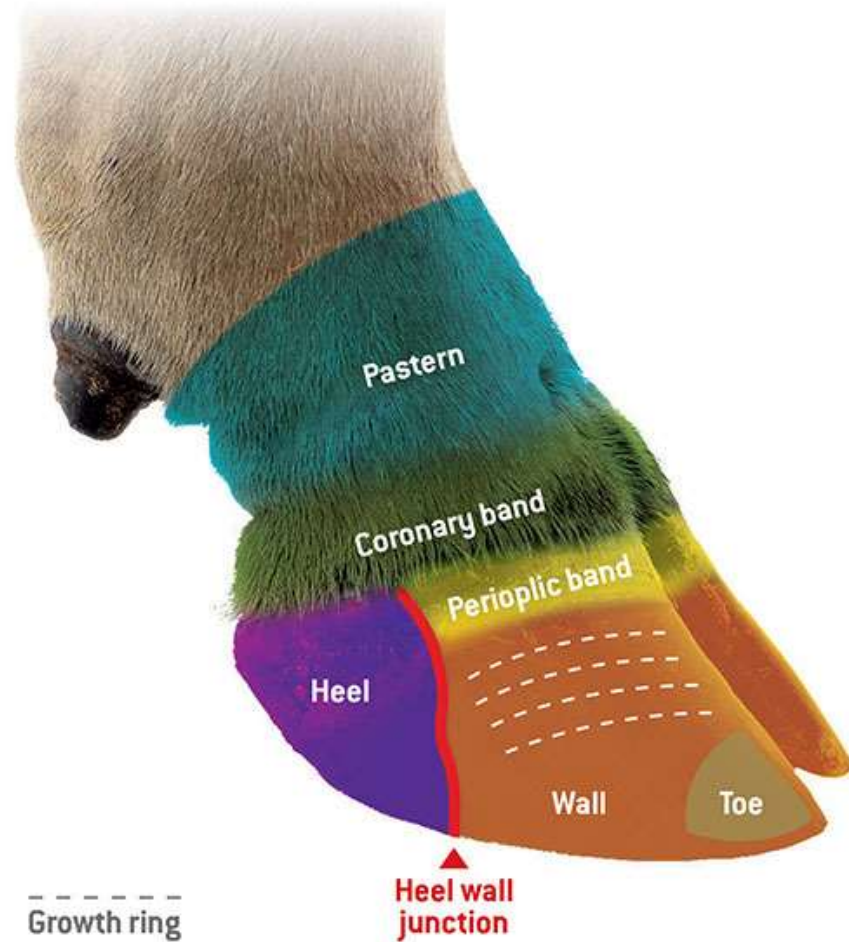
1. You will learn about (learning objectives):

- How to fix/restrain a cow for hoof trimming.
- How to lift cow's leg.
- Equipment you need for hoof trimming.
- How to functionally trim rear hoofs.
- How to functionally trim a front hoofs.
- How to therapeutically trim cattle hoofs.

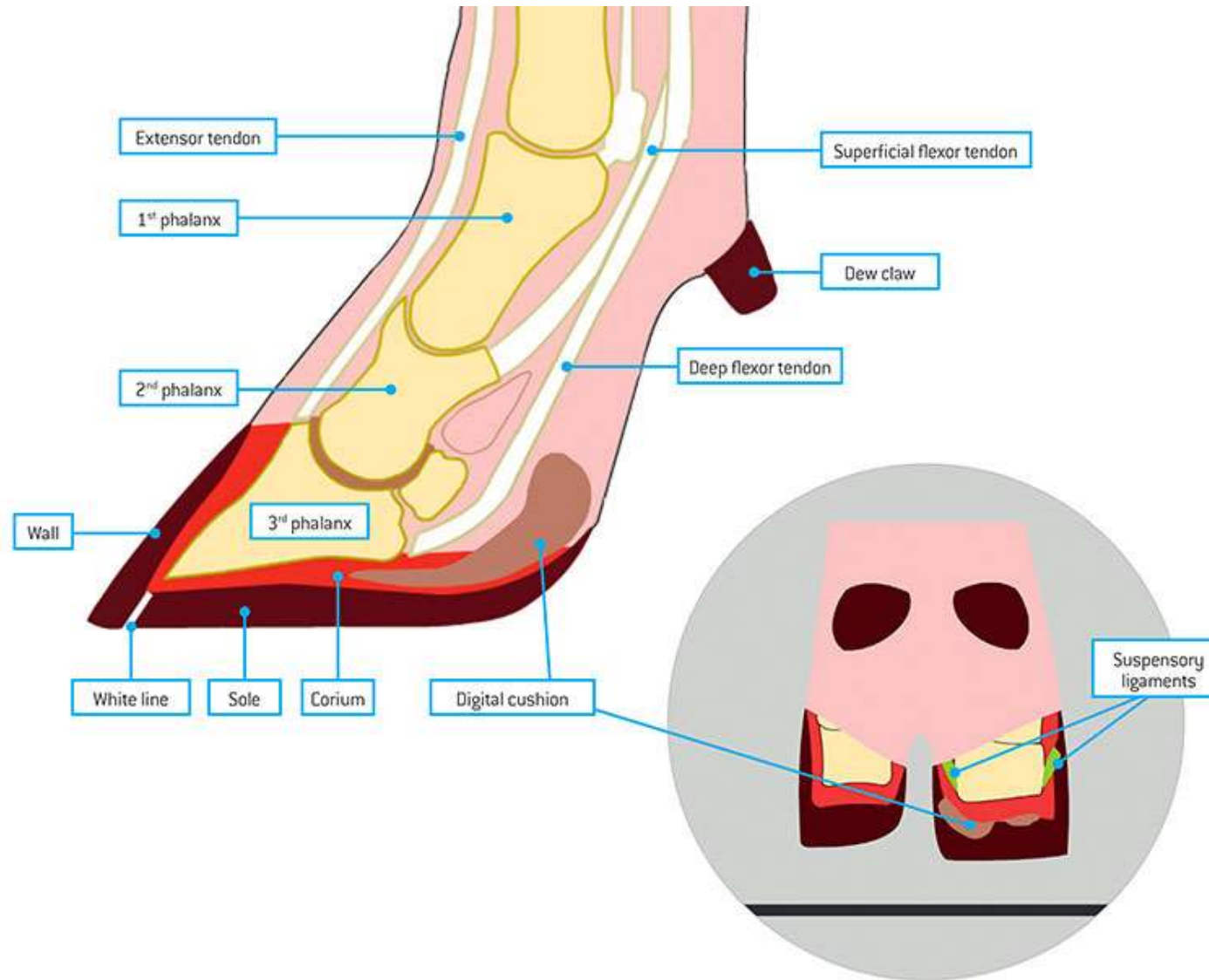
You will learn the theoretics and understanding behind the job. Only practice can give you the skills!



2. Introduction: Anatomy of the foot

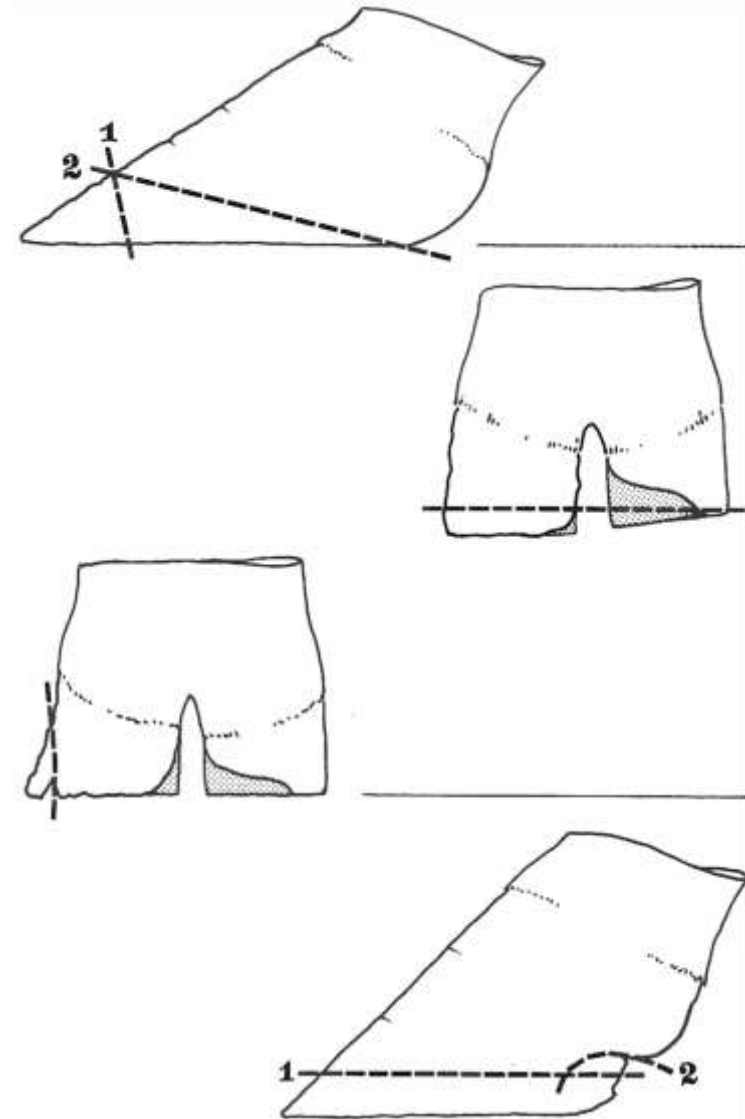


2.1 Introduction: Anatomy of the foot Cont'd...



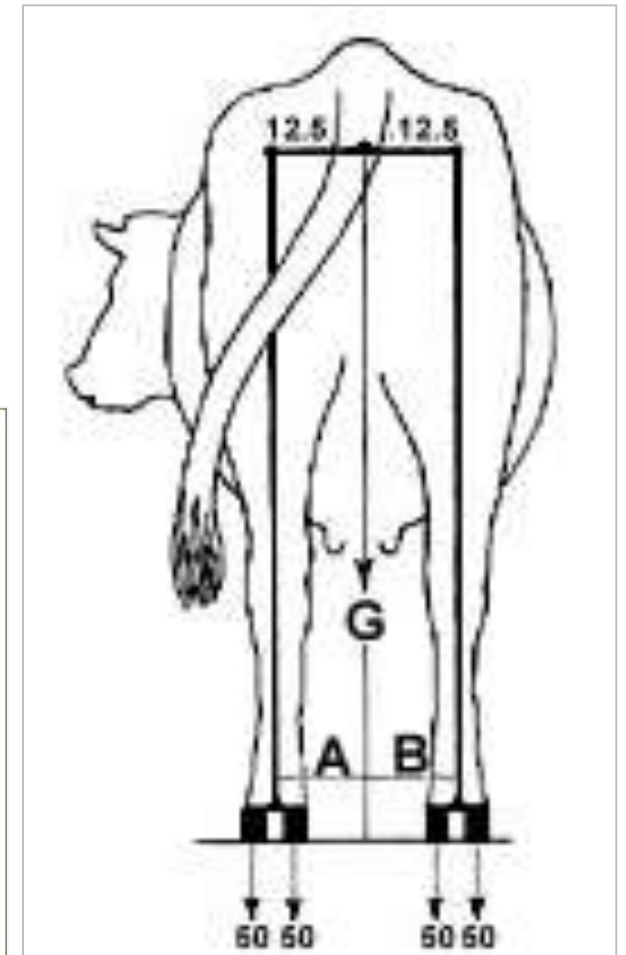
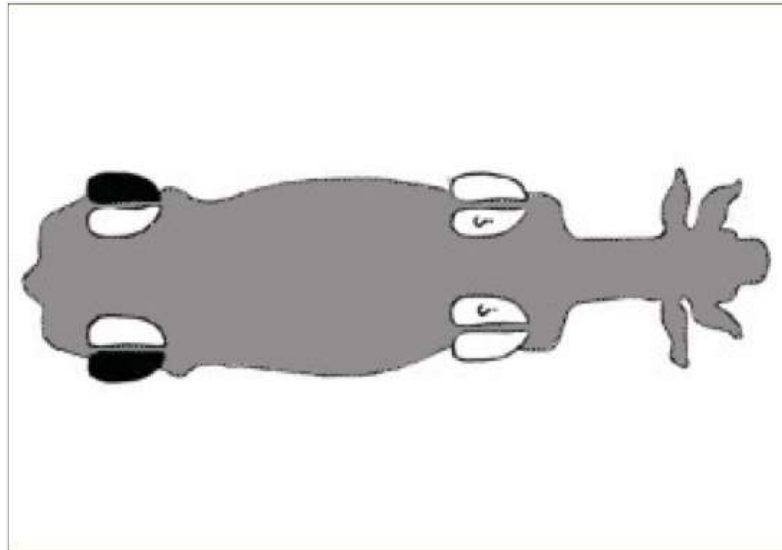
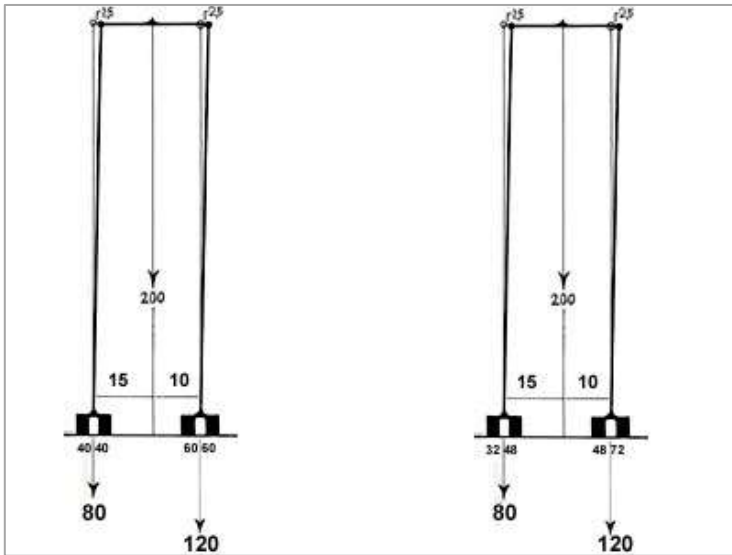
3. Why cows need pedicure

- When cattle no longer only walk in pastures all day, wearing of the hoofs changes. Also when milk production increases, the metabolism of the cow changes. These issues can lead to changes in hoof growth and appearance of hoof diseases.
- Cattle held on wet concrete floor have to be pedicured regularly by:
 - Shortening the long walls in order to equally load the pressure on the two claws.
 - Making the claws equally high, to equally divide pressure over the claws.
 - To remove loose horn to avoid pressure and entrance of possible dirt.
 - Make horn edges thinner to relieve pressure.



4. The Biomechanics

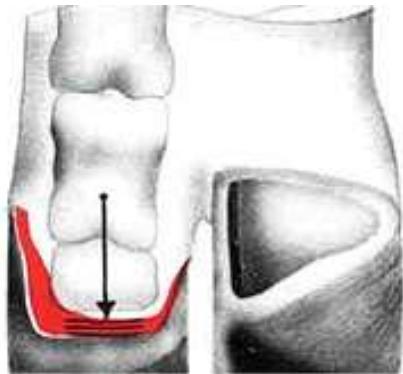
- In a normal situation, the weight is equally distributed over the 4 hoofs.
- When imbalanced, there is a difference between left and right.
- In an open system (extensive grazing) the pressure would be divided equally over the left and right claw, but in a closed system (zero grazing) there is disturbance.
- In practice the inner outside claw will be stressed the most.



4.1 The Biomechanics Cont'd...

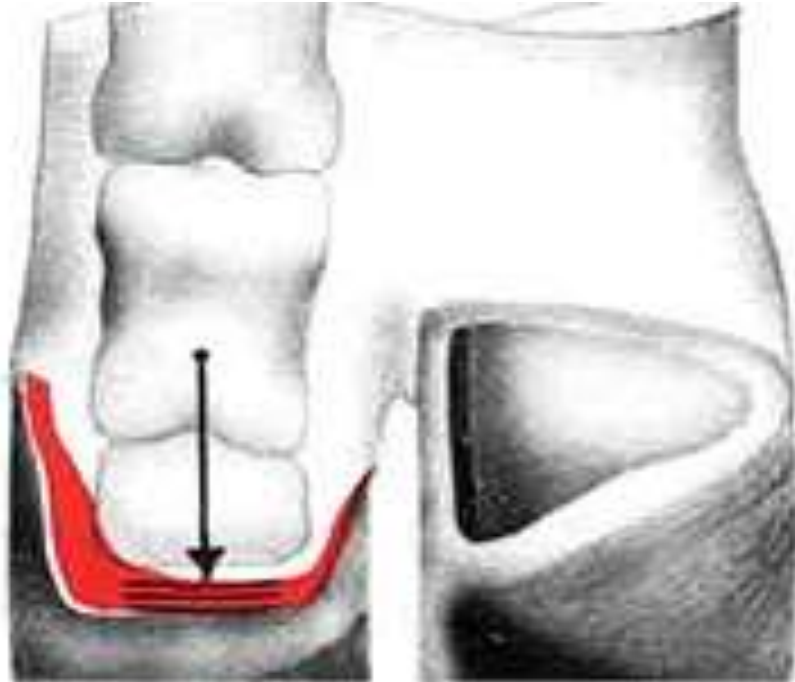


- In normal/healthy situation the pressure is divided over a larger area of the heel.

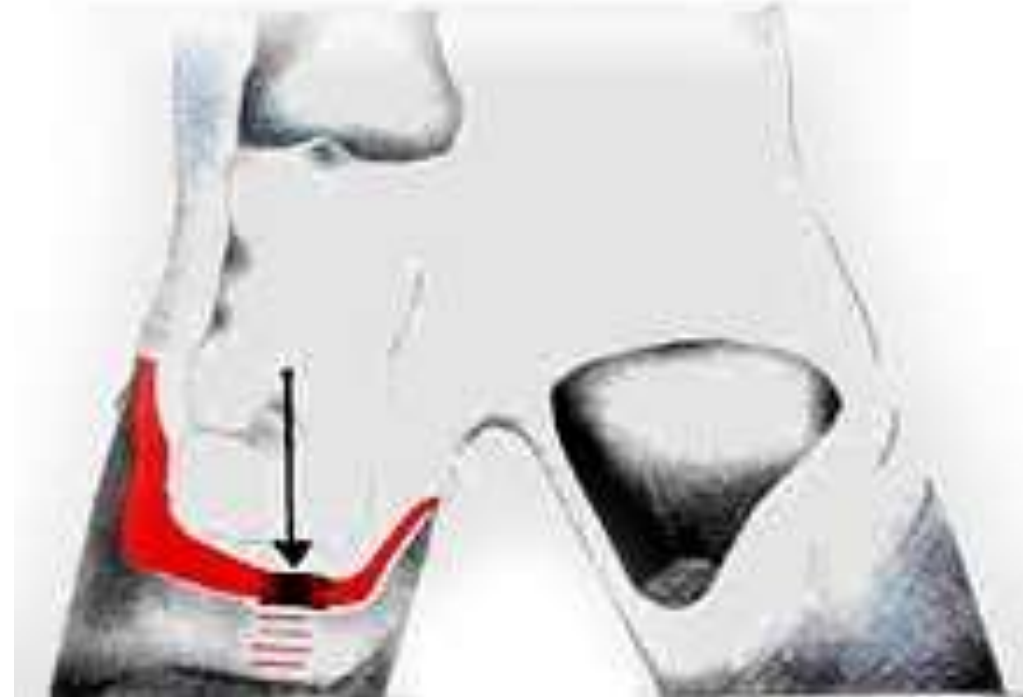


- When the situation is disturbed by overgrowth of the front part of hoof, most pressure is on a smaller area in the back of the heel, which can lead to abnormalities.
- Notice the turning of the pedal bone, comparing to the normal situation.

4.2 The Biomechanics Cont'd...



- In normal/healthy situation, the pressure is not only more divided from front to back but also left right.



- The pedal bone is now pressurized when the side wall grows long and the inner heel worn out, the pressure comes to a smaller area aside from the center.



Tip: With functional hoof trimming you want to bring this back to normal situation.

5. How to fix/restrain the cow

- In order to properly trim a cow's claw, she needs to be fixed/restrained to perform the job well and to safeguard the health of the trimmer.
- Traditionally this was done by hand. To ease the work a bit, a tendon clamp was developed.
- To do it properly you need a claw box.



Leg lifted by hand



Cow fixed against the wall



Cow in a claw trim box

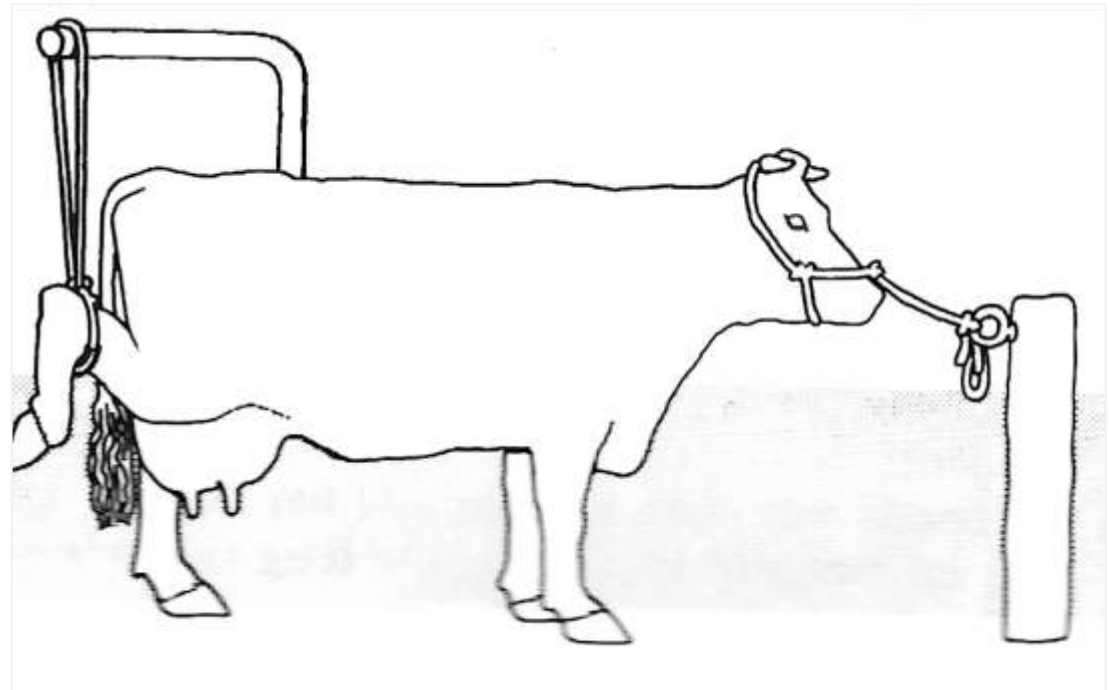
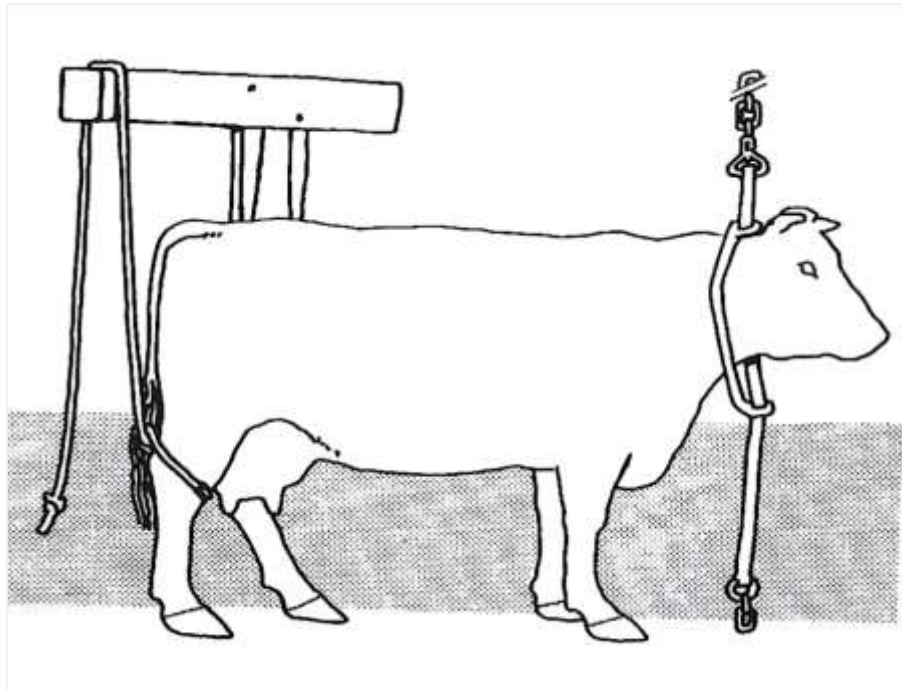


Tendon clamp

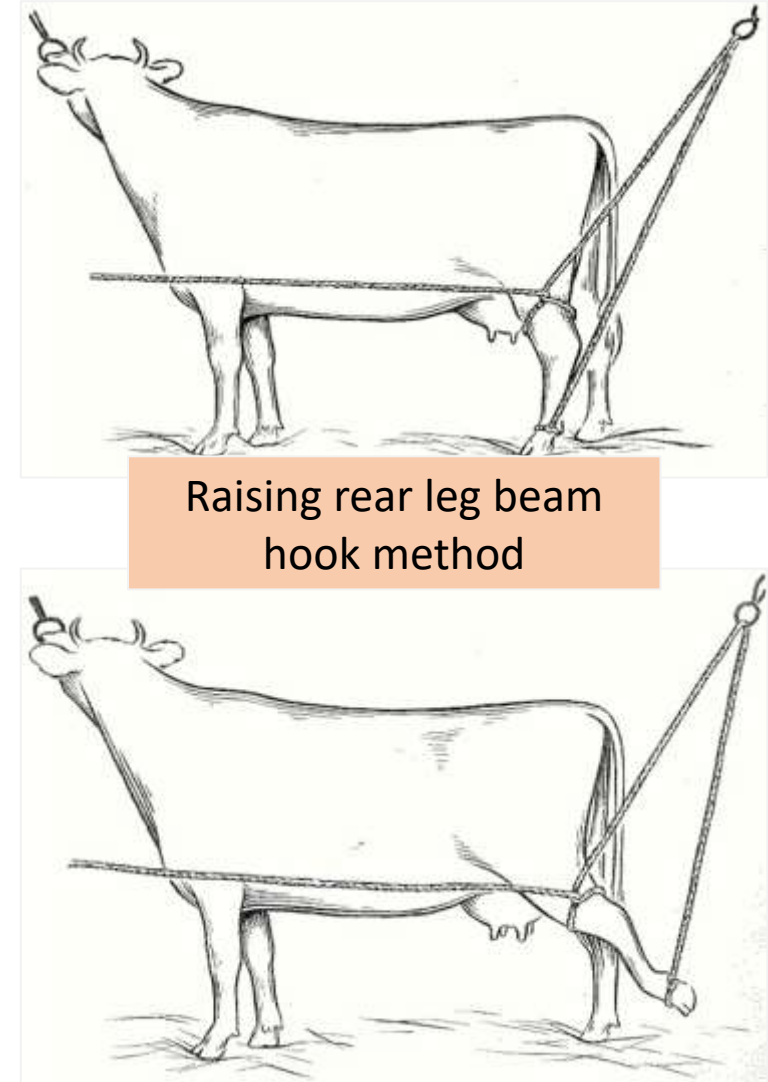
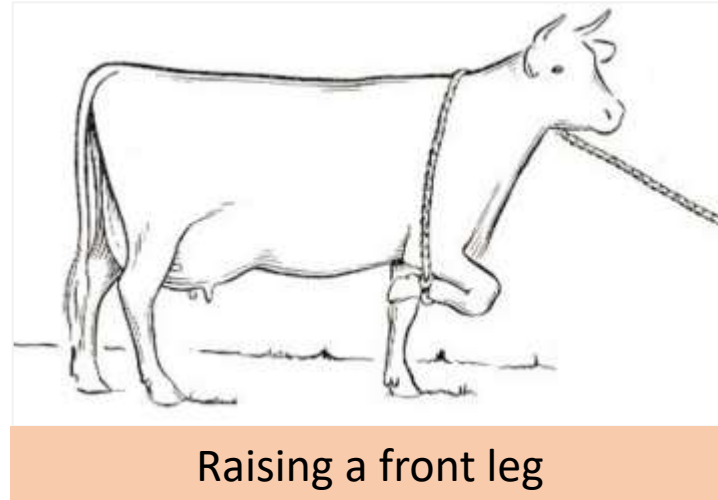
6. How to fix the leg

When not having a hoof trim box;

- Fix the cow's head.
- Use a stick and smooth rope.
- Lift the hock straight up, to the height of the tubular bone.
- Do not panic when cow falls, it can happen. Easily release the rope first.



6.1 How to fix the leg Cont'd...



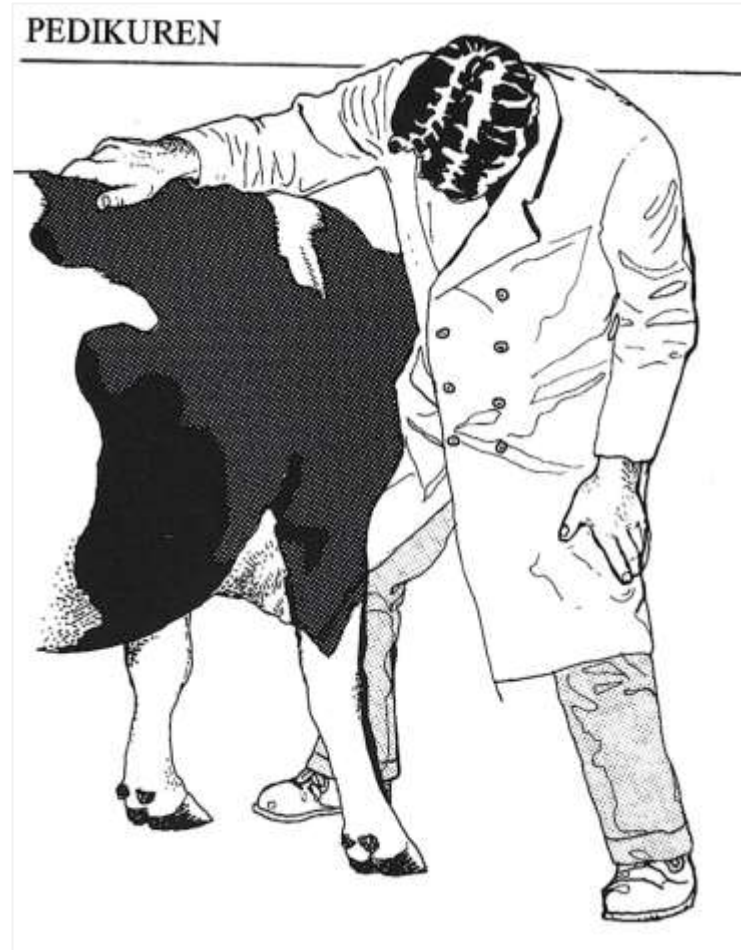
7. How to take up the rear/hind leg

- Put your knee to inner side leg.
- Push with the shoulder to the other leg, so it is forced to stand straight on that leg.
- Rotate hock to the outside and squeeze the dewclaws.
- Bend the under feet and keep it low under the cow.
- Keep your head aside and do not put your tongue between your teeth.



8. How to take up the front leg

- Put your knee to inner side leg.
- Put your arm behind the inner leg.
- Push with the shoulder to the other leg, so the cow is forced to stand straight on that leg.
- Force with your knee, the leg to the outside.



9. Hoof trimming equipment



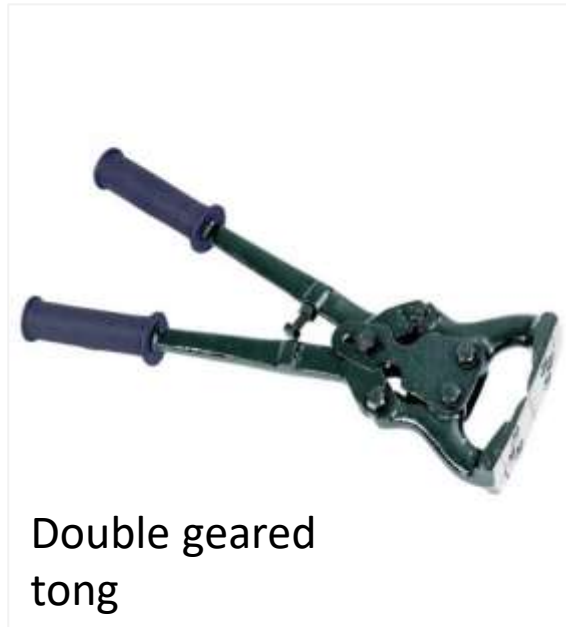
10. Hoof knives

- There are left handed and right handed knives.
- If you are right handed, it is also handy to have a left handed knife.
- Keeping the knives sharp is crucial.
 - A hone stone or sharpening steel will help.
 - Regular sharpening with grinding machine is required.



11. Tongs and angle grinder

- There are many different sizes of tongs.
- With a double geared tong you can cut very straight edges.
- An angle grinder is a good tool for professional and experienced hoof trimmers.
- The chance of causing injuries with an angle grinder is not imaginable.



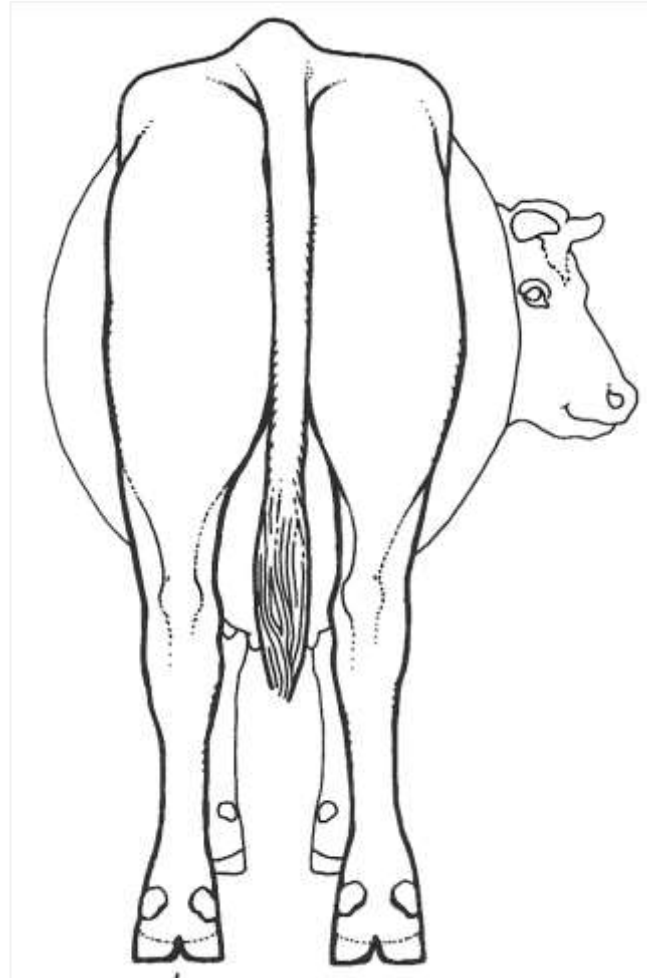
12. Pre-trimming checks

- Check how the cow is standing.
- Check the length and shape of the claws.
- Clean the hoofs with water and a brush.
- Inspect the hoof and especially the space between the claws.
- Check the length and shape of the claws.

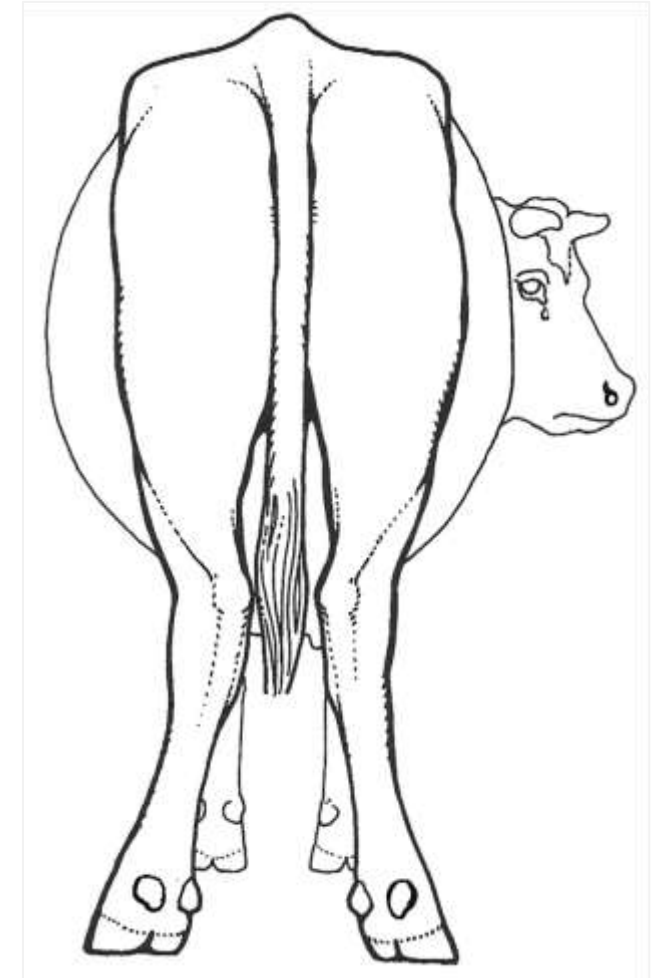


Tips:

- Check stand
- Clean
- Check hoofs



Cow standing straight, likely not much trimming required.



Hocks bends inside, outside claws need to be shortened. Therapeutic trimming possible.

13. Five (5) steps of hoof trimming

- The five steps of hoof trimming is a systematic approach to get a job well done.
- The order in which the five steps are taken is of utmost importance.
- Every step focuses on how to get the cow standing fair and square.
- By starting with treating the problems first (step 5), the aim can be in jeopardy.

The five (5) Steps

1. Decide the length and trim the length of the inner claw.
2. Fit the outer claw to the inner claw.
3. Make them flat.
4. Model them in right shape and remove loose horn.
5. Treat any diseases (therapeutic trimming).



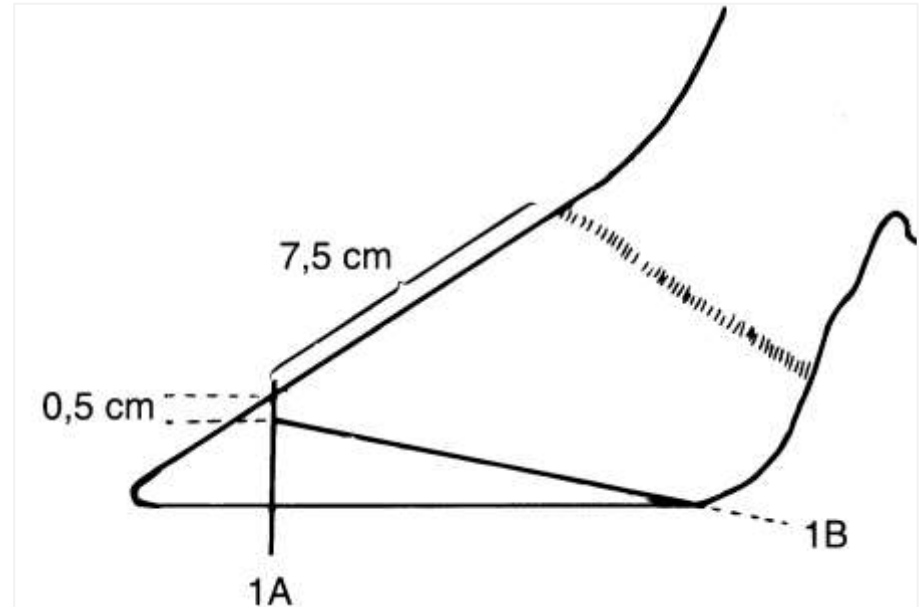
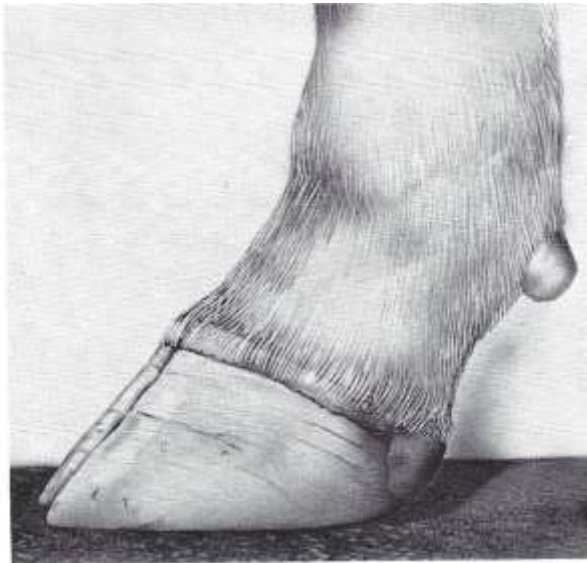
14. Step 1: Decide the length and trim the length of the inner claw



To decide the length of the claw is very important; the hoof shoe should fit perfectly. By cutting too short, the soft tissues will be damaged.

14.1 Step 1 Cont'd: Decide the length and trim the length of the inner claw

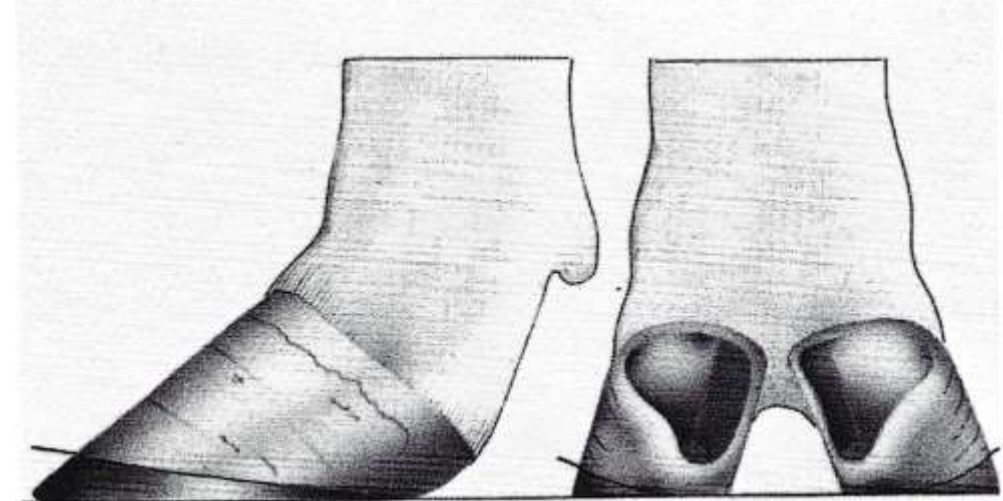
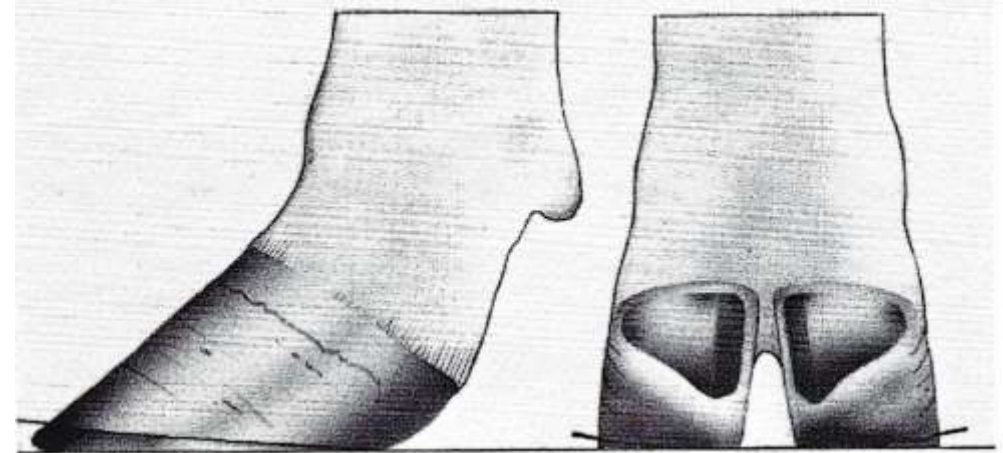
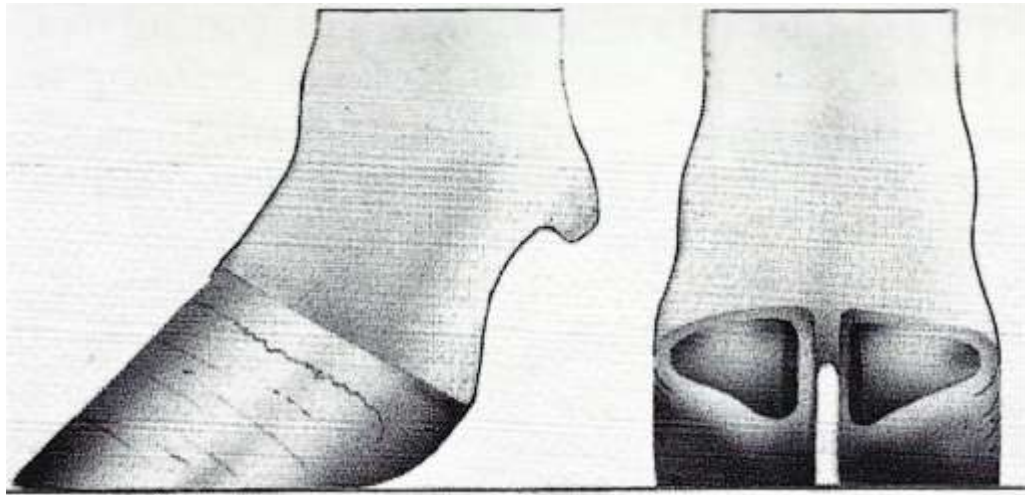
- A healthy claw will make a 45 degree angle with the floor.
- The length from the tip of the hoof to the coronary band will about 7.5 cm. This is similar to 4 fingers wide. This width of your hand minus the thumb.
- In most cases only the rear hoofs need a trim.
- When walking on a hard floor, the medial side of the claws will grind faster and the front and lateral side will grow long.



- Cut the inner hoof at 7.5 cm (1A)
- Leave the sole 0.5 cm thick (1B)
- Leave the back 5 cm high (1C)

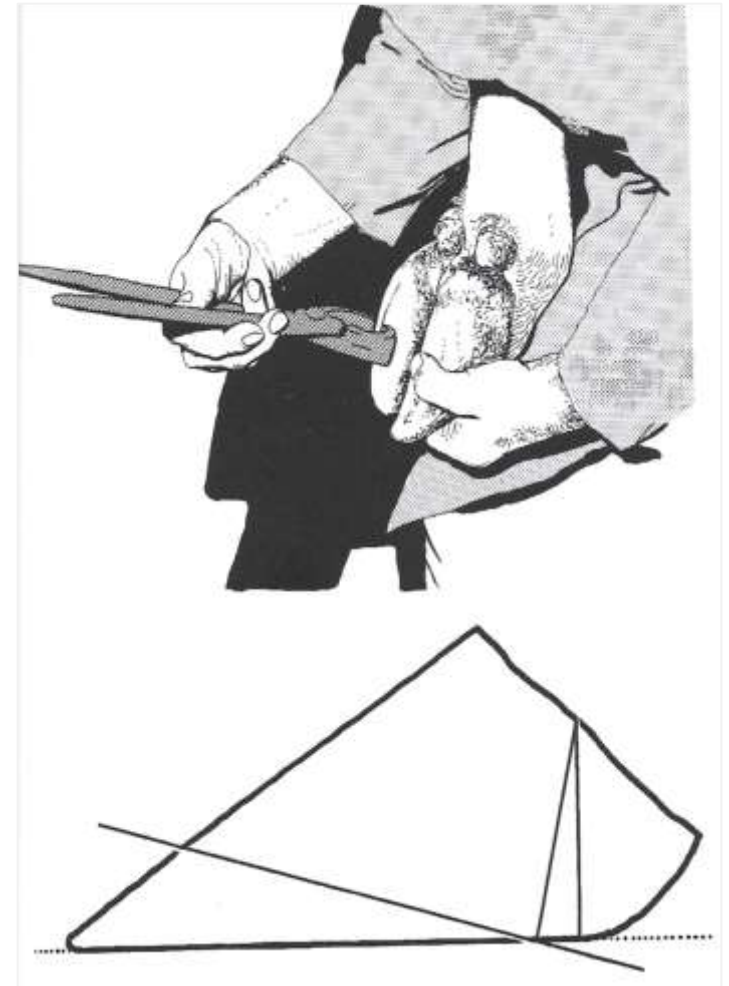
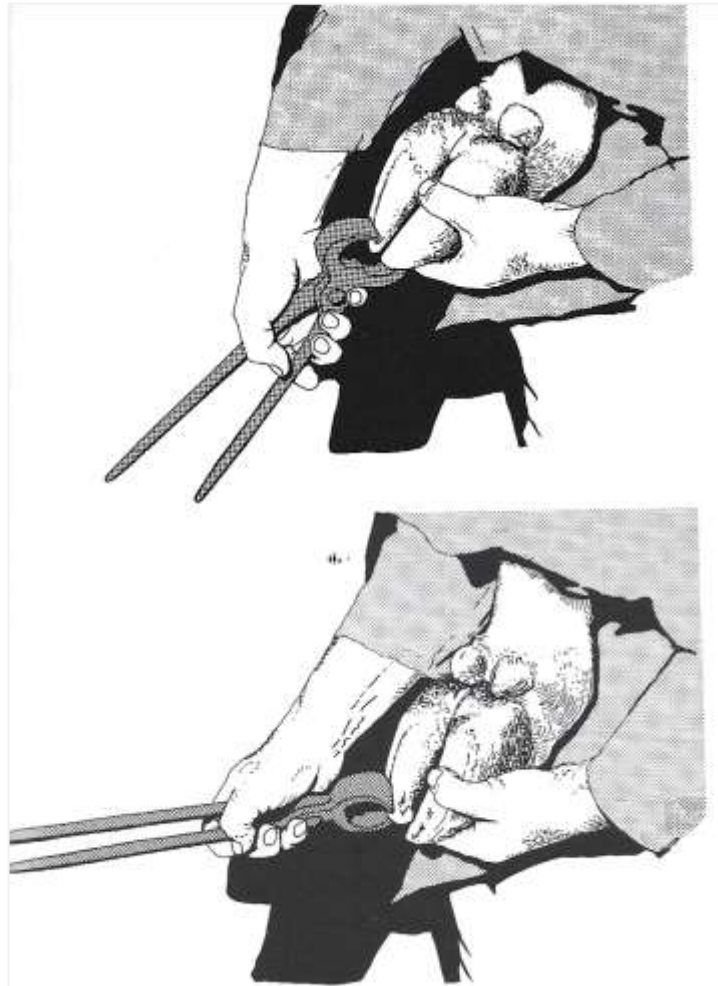
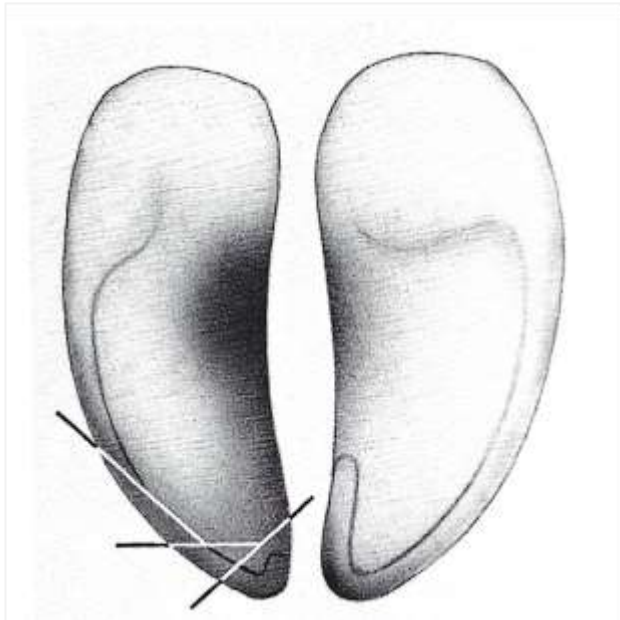
14.2 Step 1 Cont'd: Decide the length and trim the length of the inner claw

- The aim will be to get the cow standing in the best/normal way as in the picture underneath.
- This means that horn needs to be removed like indicate on the pictures on the right.



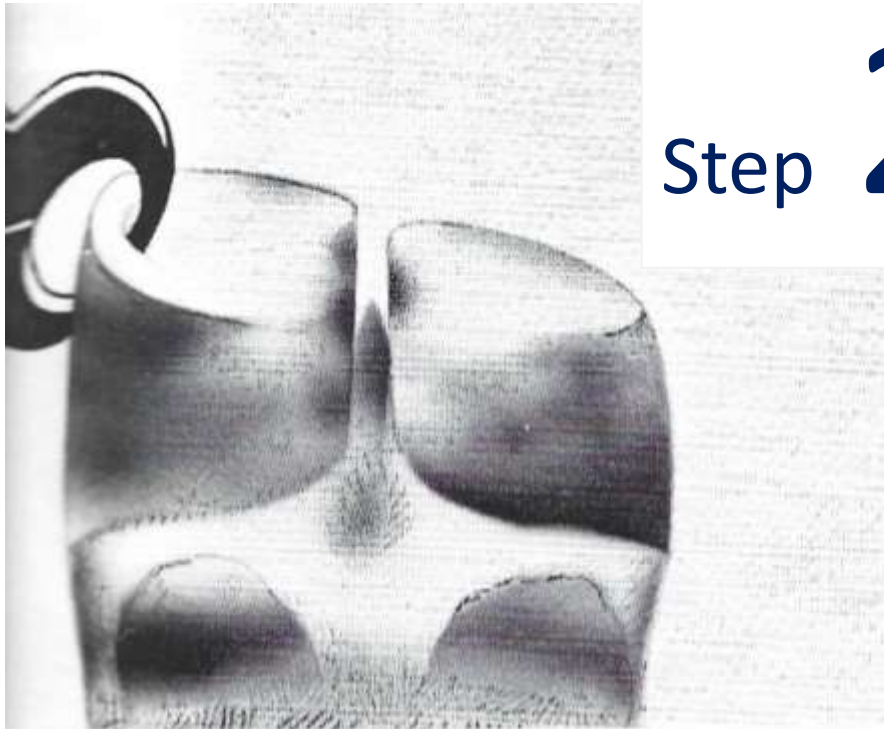
14.3 Step 1 Cont'd: Decide the length and trim the length of the inner claw

- Clip the hoof as shown in the pictures.
- Do not shorten the wall on the heel side.
- Aim is to keep the inner claw as high as possible.

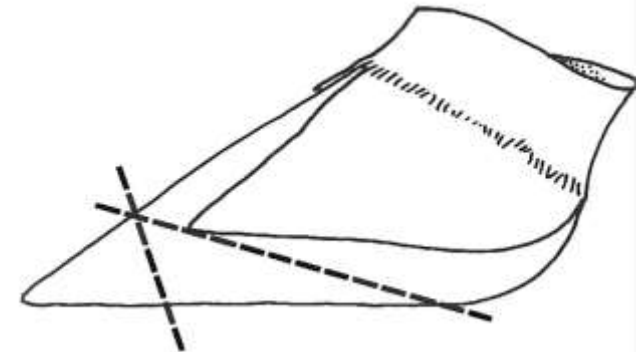
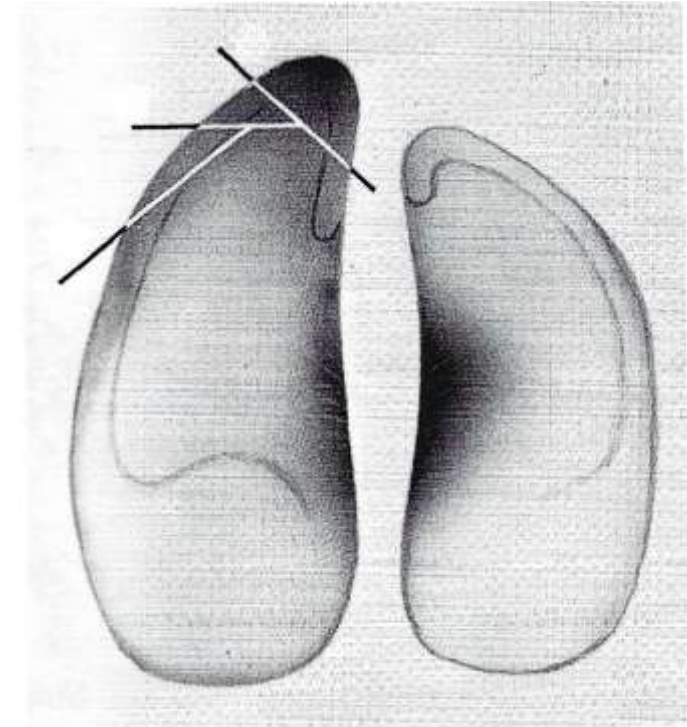


15. Step 2: Fit the outer claw to the inner claw

- Clip the outer claw just as long as the inner claw.
- Do not clip if the length is normal.
- Clipping too short, especially at the tip of the sole can give lesions, which can lead to a nasty lameness.

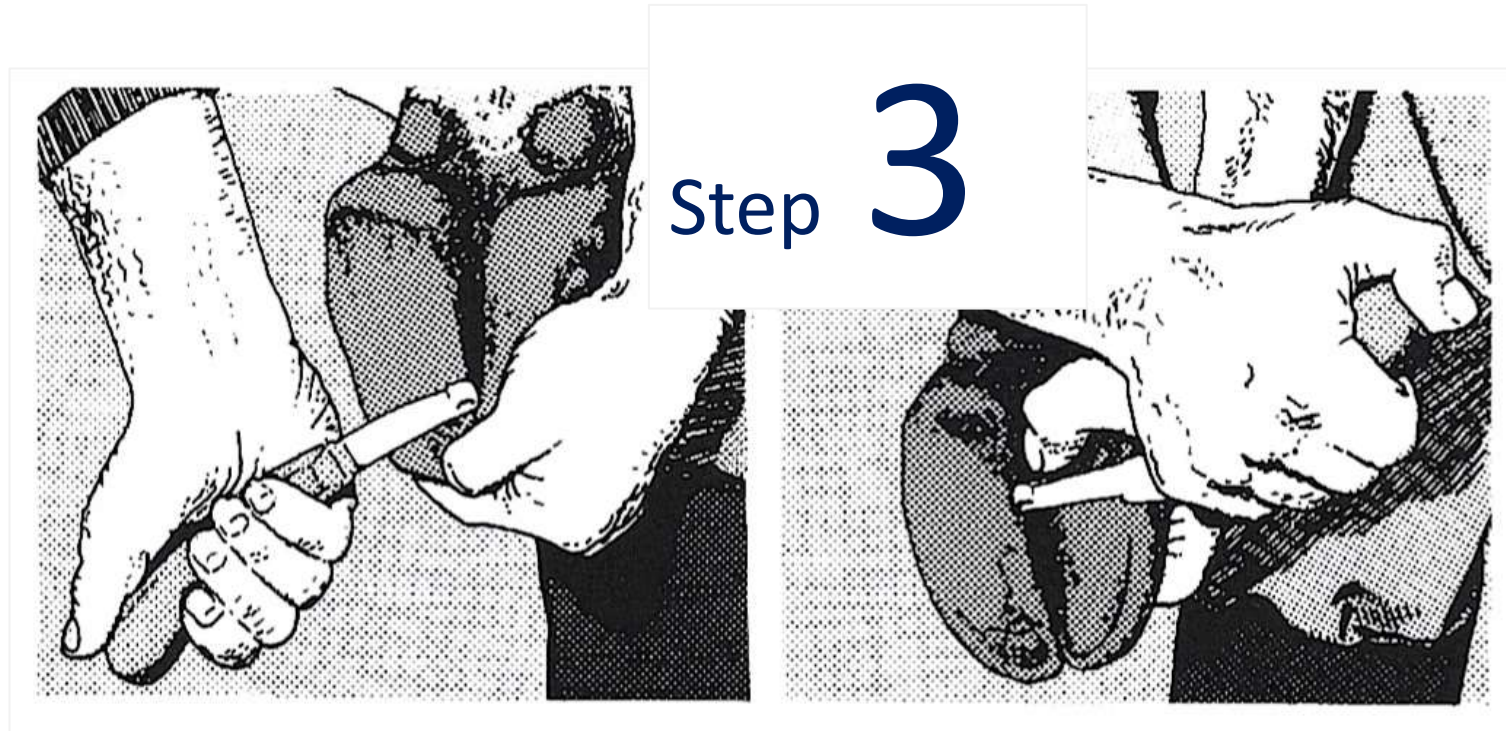


Step 2



16. Step 3: Make the soles flat

- Cut by slicing the knife.
- Cut flat not hollow.
- Do not start modelling the hoof yet.
- The length is decided by the edge of the clipping.
- Do not take horn from the heel.
- For checking if the soles are flat, put the flat side of the handle of your knife on both claws.
- Take distance and judges the angles.
- Some trimmers tend to keep the inner claw a bit longer to take the pressure from the outer claw.



Safety first

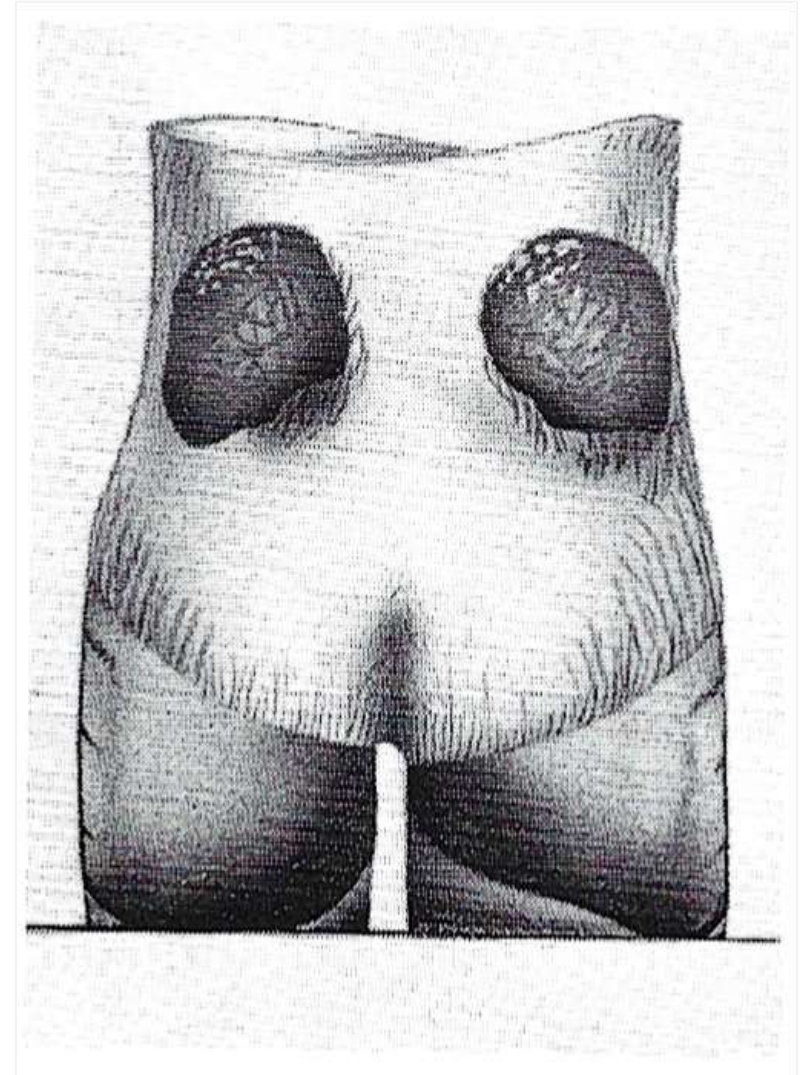
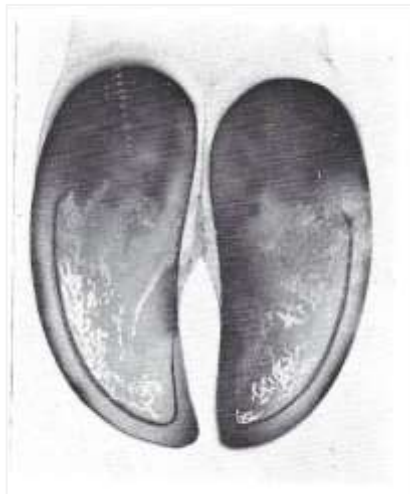
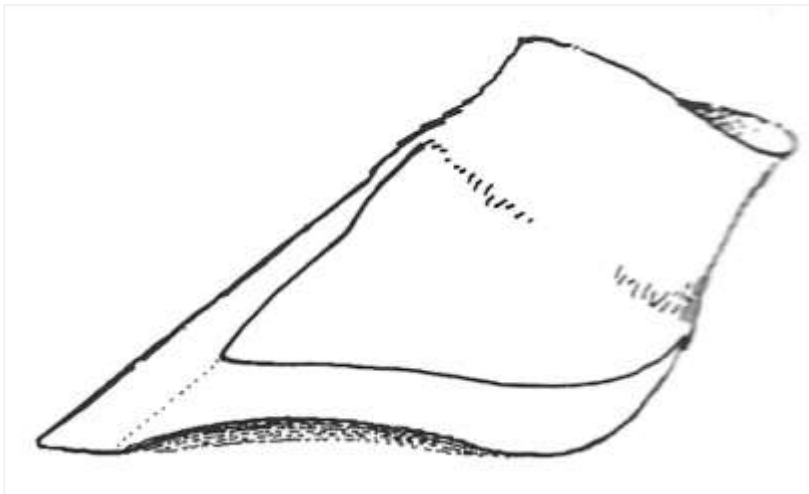


- Keep the hoof knife as flat as possible with the sole.
- Support the hoof with the hand not used for cutting.
- Always cut away from that hand.

16.1 Step 3 Cont'd: Make the soles flat

When levelling the outer claw;

- First clip away the horn to correct length.
- Then make the sole flat. Do not take too much horn from the heel, this is tempting because that horn is much softer and easy to cut.
- It should not be possible when pushing with your fingers, that the sole bends. When this is possible, you have cut too short.
- When horn is flaky, you are still safe.
- A healthy claw has sole thickness of 5 mm.



16.2 Step 3 Cont'd: Make the soles flat

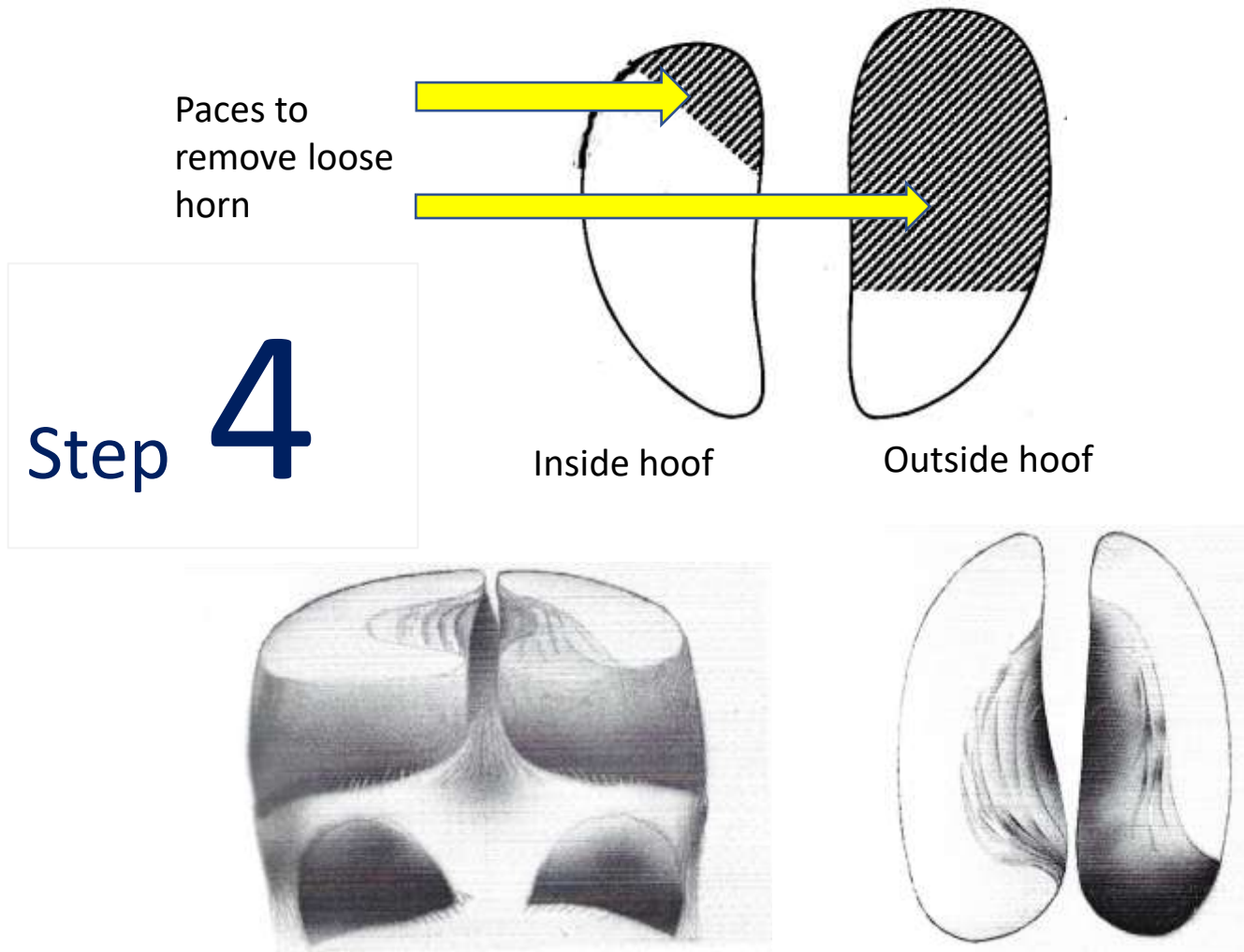
Check closely if the sole is flat.

- Put your hand on the front of the claw.
- Watch from above as shown on the picture.
- To help check, you can put the flat end of the handle of the knife or a another flat item on the sole.
- It can also help to look from another angle, the side, to judge again. This way you can also check the 45 degree angle the hoof should make with the standing surface.
- If not correct yet, adjust it.
- Make sure you do not cut too short.



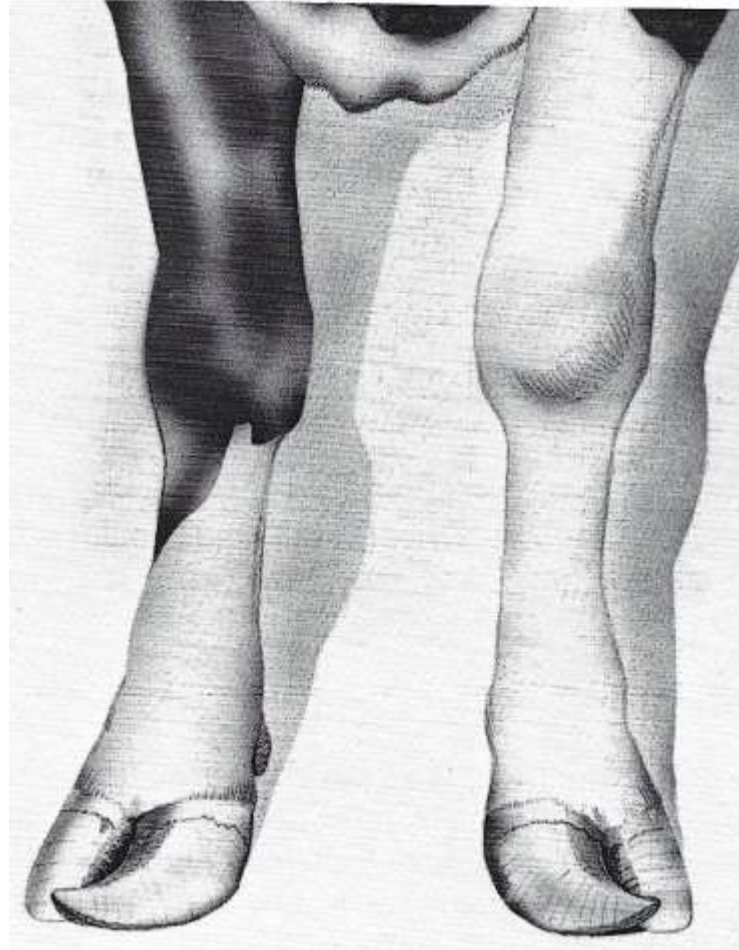
17. Step 4: Model the sole and remove loose horn

- The last step of the functional pedicure is to model the sole and to remove loose horn.
- If modelling is really necessary, it is disputable; but it looks better and is easy to perform, because the horn is soft and easy to cut.
- Now the functional pedicure is ready. The cows stand will be corrected and when the claw is healthy the job is now finished.
- You can put the leg on the floor now and check the result of the work done.



18. Trimming of the front legs

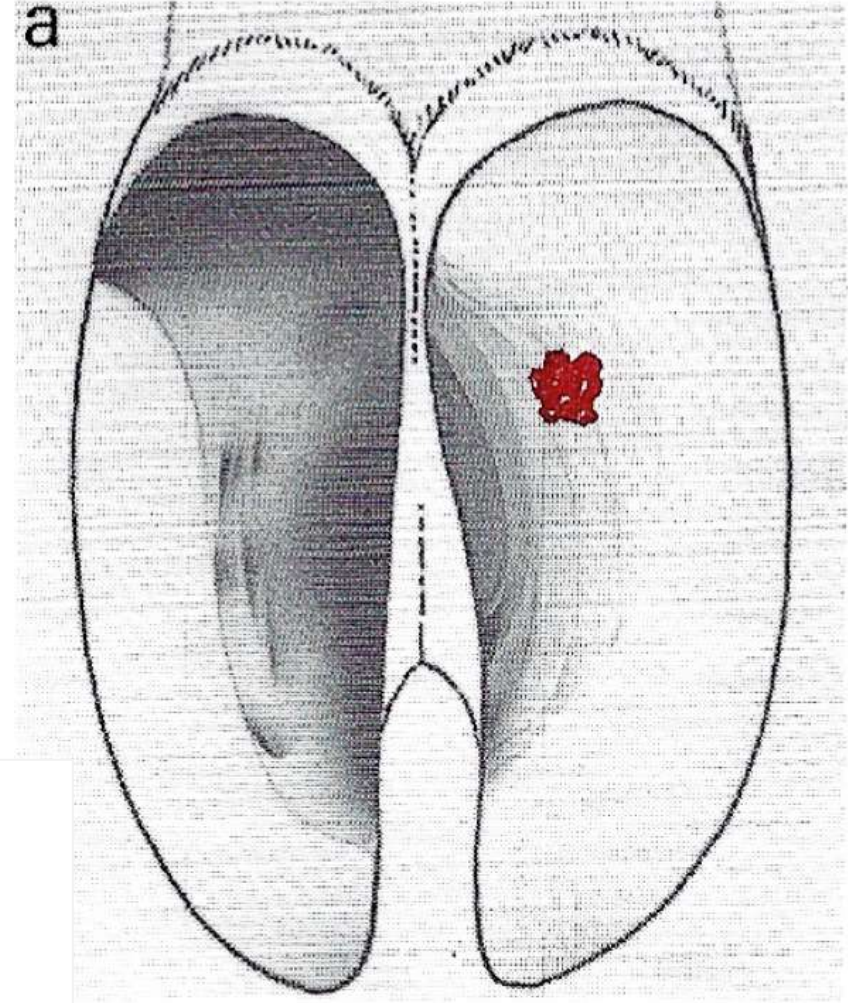
- In general, front legs do not need much attention and hoof trimming is rarely done.
- The procedure for trimming the front claws is similar to the rear legs with one exception.
- The inner claws grow faster contrary to the rear legs, so the outer claws are shortened first.



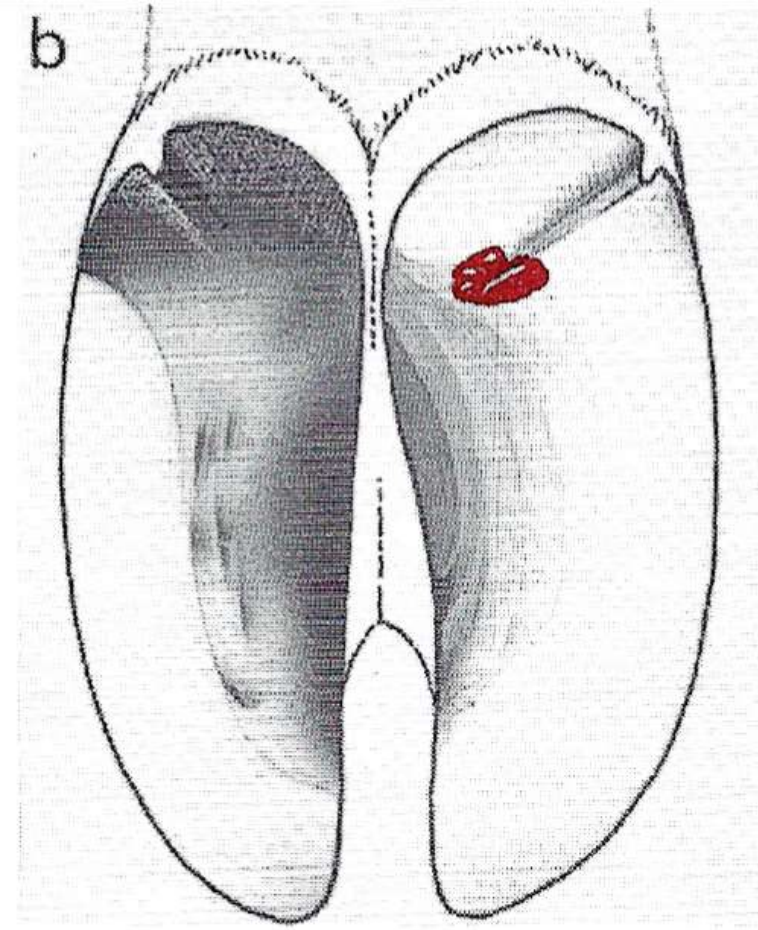
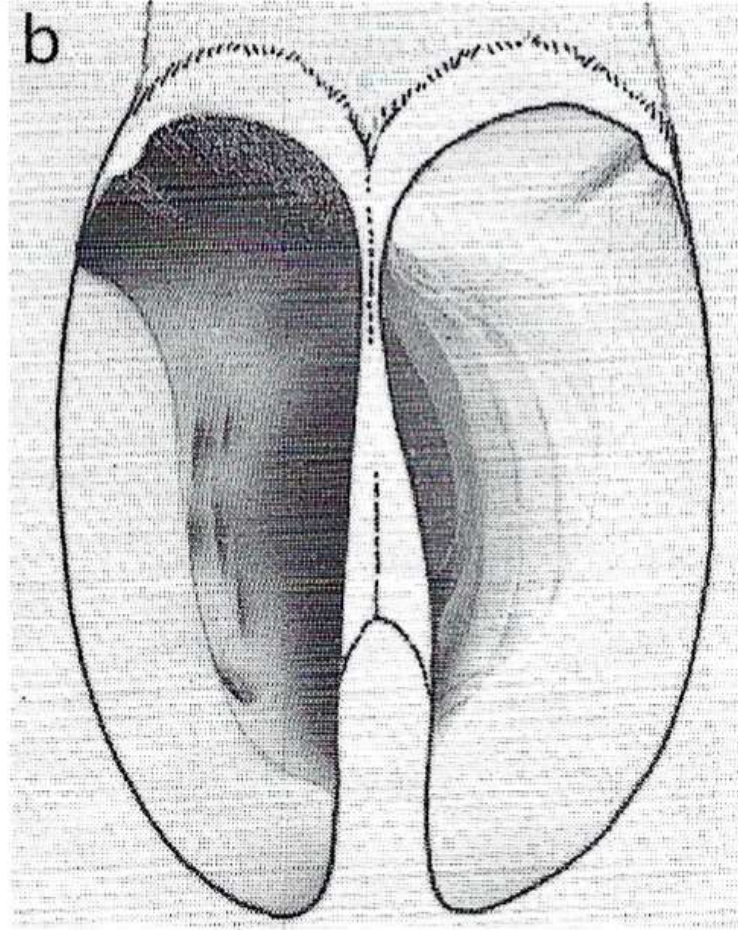
19. Step 5: Therapeutic pedicure

- The most important step for therapeutic trimming is already taken. By good functional pedicure, the cows standing position will be improved. This will decrease lameness and already help cure possible issues.
- Nevertheless there are certain problems, which require special attention.
- Five different issues can be named:
 - a. Sole Ulcer
 - b. Fissures
 - c. Loose walls (at the white line)
 - d. Extended releases of the horn with superficial damage of the dermis.
 - e. Wall breach.

Step 5

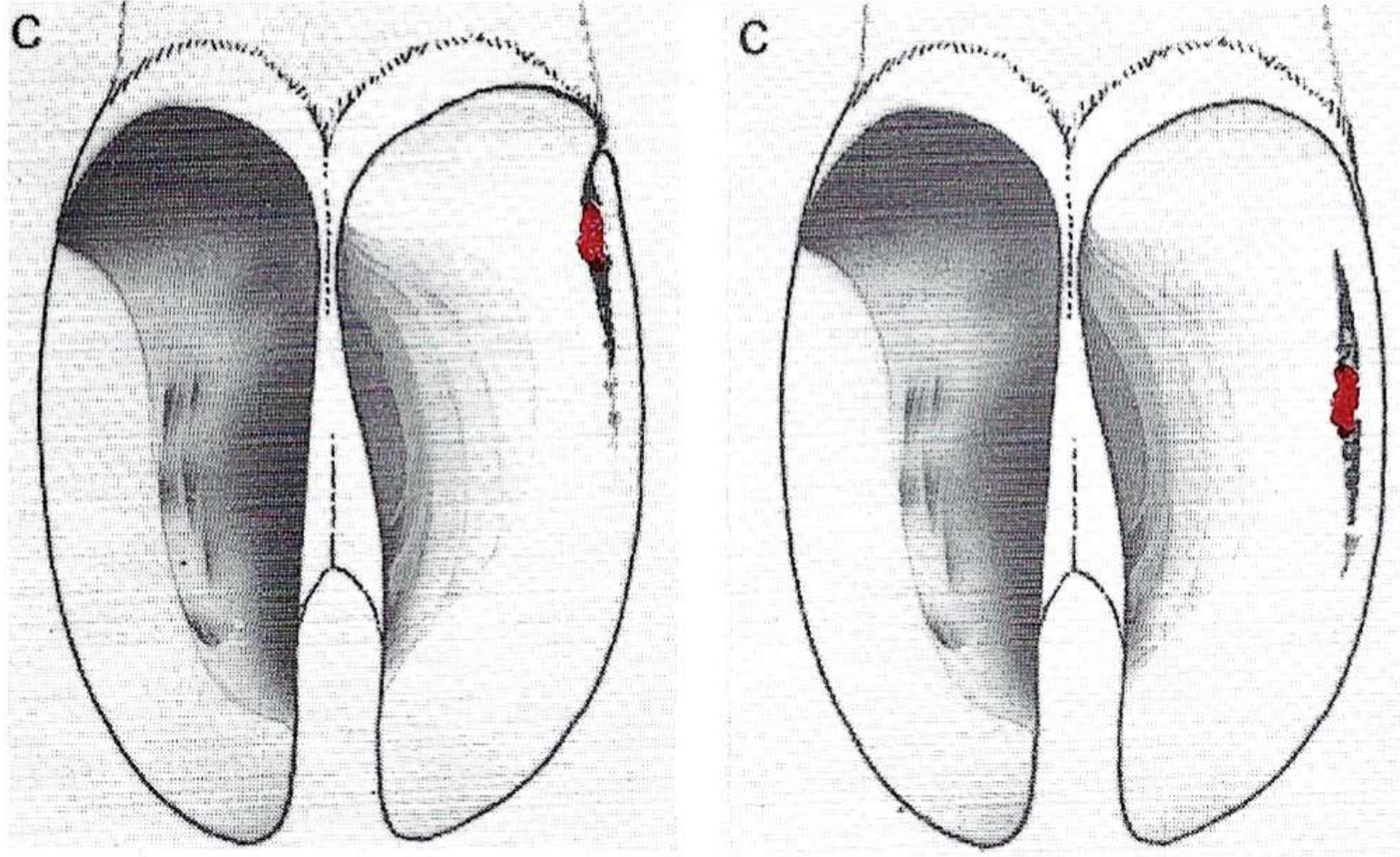


19.1 Step 5 Cont'd: Therapeutic pedicure



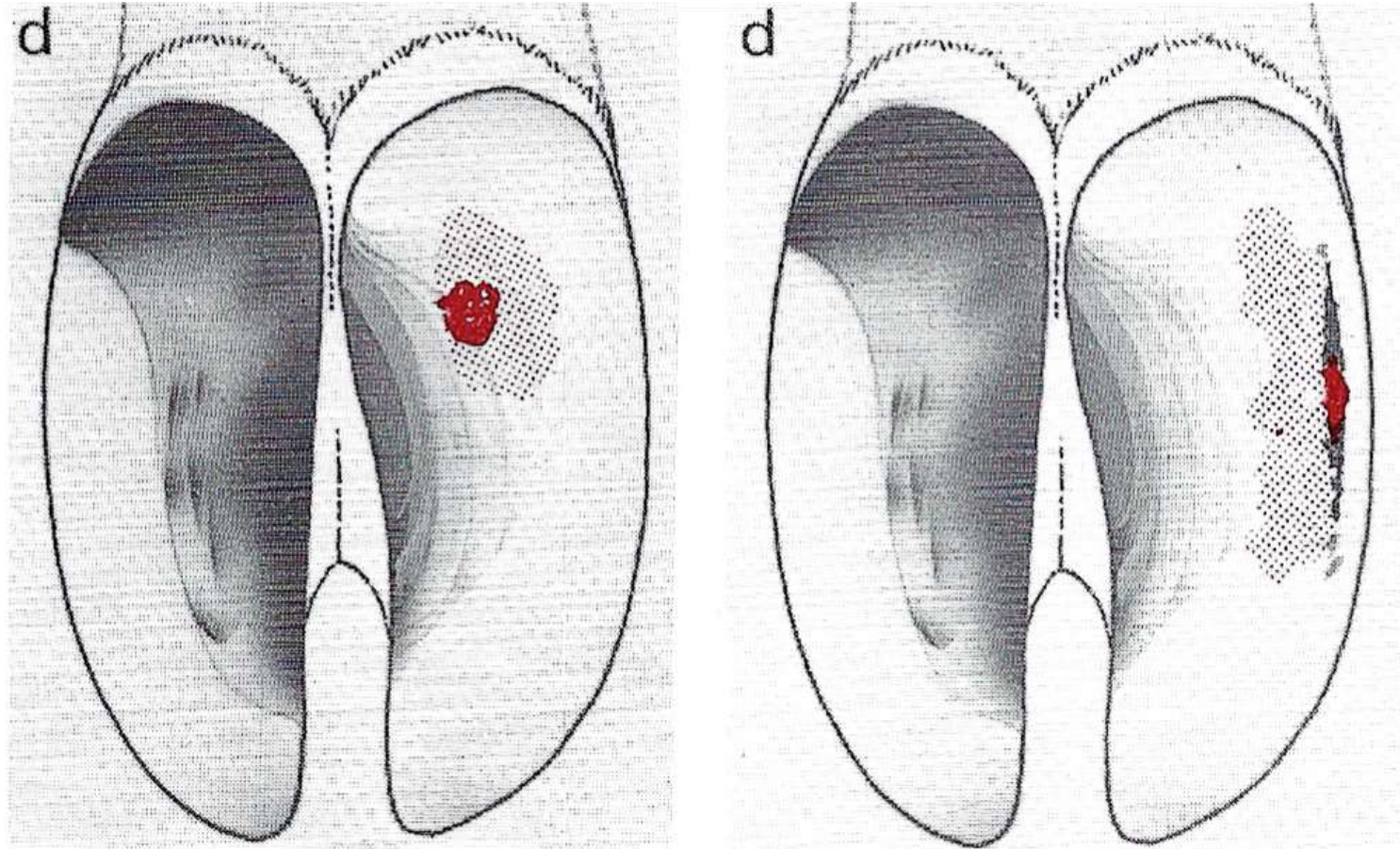
Fissures

19.2 Step 5 Cont'd: Therapeutic pedicure



Wall defects in the white line

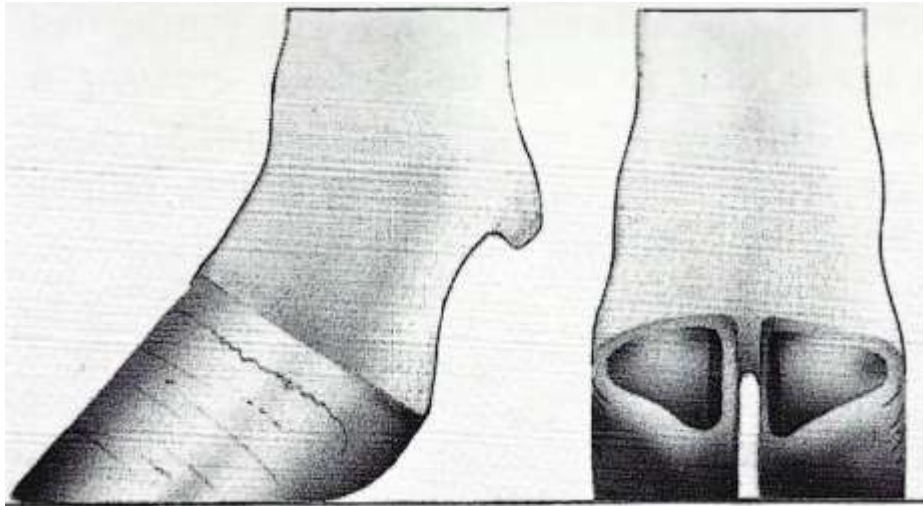
19.3 Step 5 Cont'd: Therapeutic pedicure



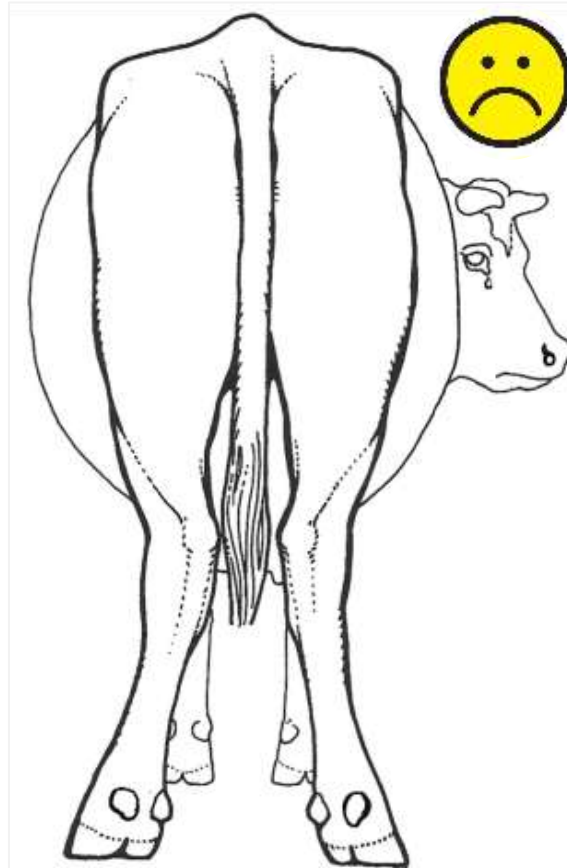
Extended releases of the horn with superficial damage of the dermis.

20. When the job is finished: Results of hoof trimming

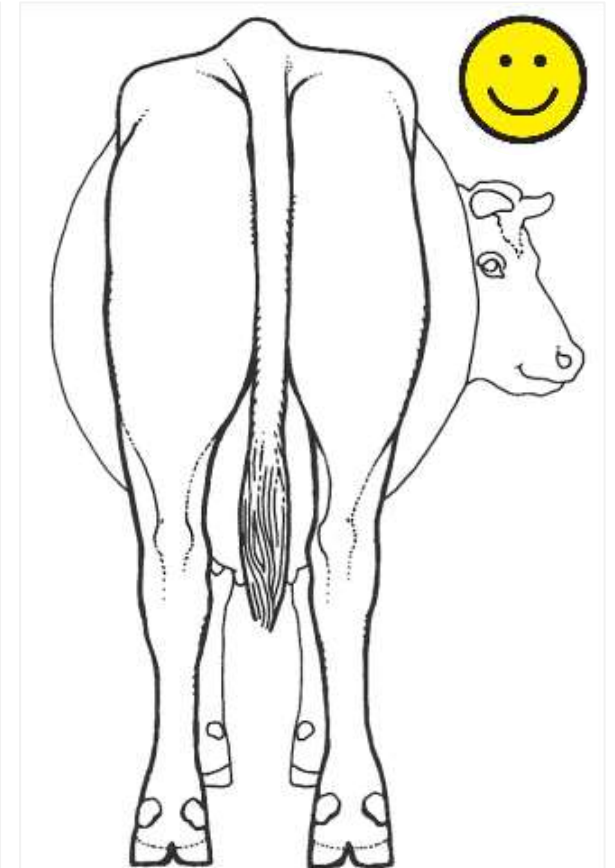
- Put the leg back on the floor and check.
- Go stand behind the cow and look if there is improvement.
- Go stand aside of the cow in judge of the angle of the hoof with the floor is correct.
- Often perfection is not achieved, but improvement should be observed.



The result of hoof trimming



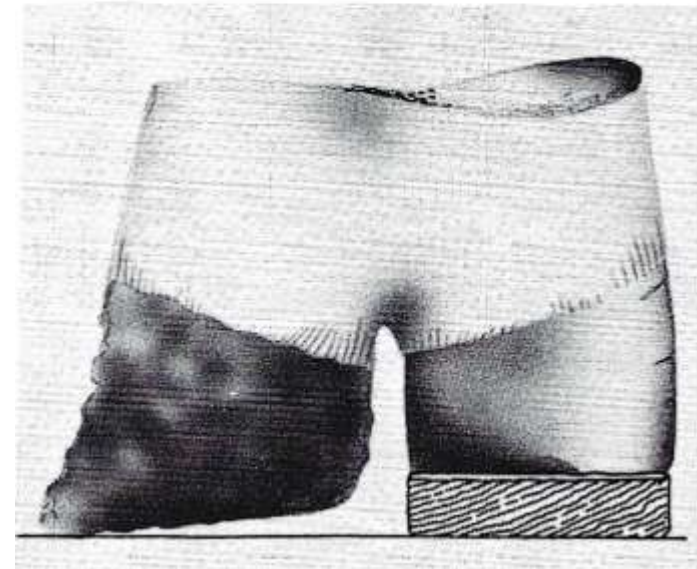
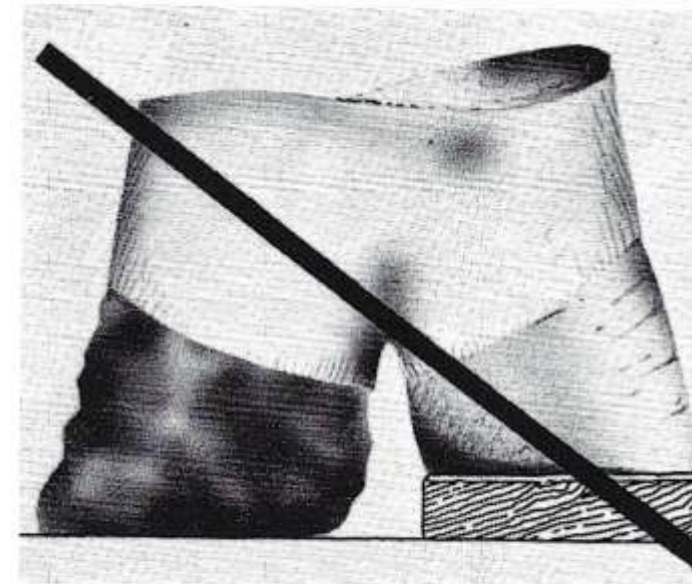
BEFORE trimming



AFTER trimming

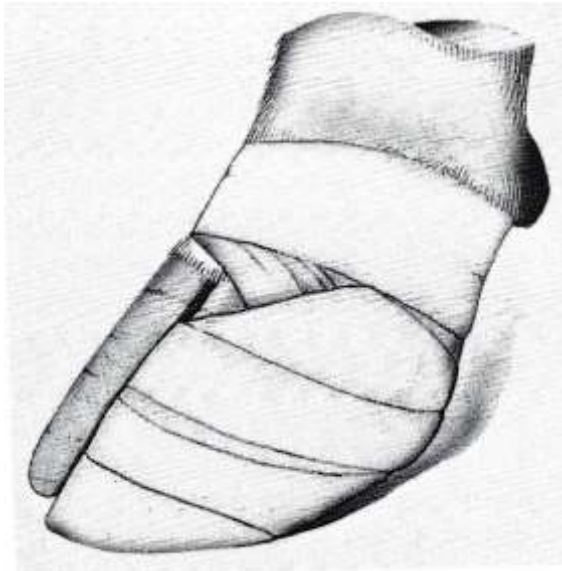
21. Extra care: Claw blocks or claw shoes

- When the claw is severely damaged after trimming and you want to release the pressure on that claw, you can decide to put a block or a cow slip under the healthy claw, to make sure the pressure is released from the damaged/outer claw.



22. Extra care: Bandages

- In nearly all cases is the use of bandages not recommended.
- It is a lot of work and the effect of what you want to achieve is often disappointing.
- The chances that an ulcer will prolapse are minimal.
- It can recommended only in case of severe ulcers near the toe, which are painful.
- But in these cases a block or a cow slip will in most cases do the job.



23. Summary/Take home messages

Disclaimer

1. You only become a skilled hoof trimmer with a lot of practice, if trained on the job by an experienced teacher.
2. Understanding the theoretics behind the work you perform is essential.
3. No hoof trimming job can be done without proper tools.
4. To continue practising, maintaining tools (knives) is crucial.

Watch video:

<https://youtu.be/BxvuXyJ4nrs>

