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Thank you very much from your KRAIBURG research & development

## SOFT WALKING AREAS AND CLAW HEALTH

### Problem: overstressing

On hard stable floors mechanical-traumatic claw diseases can develop, caused by an unnaturally strong pressure load. In 80 % of the cases the hind claws are affected, indicating excessive load as the main cause.

### Anatomy and Biomechanics

Only on soft ground can cattle walk naturally on their claws - cattle are animals that require soft ground to walk on:

- with cattle their outer toe is 3 mm longer than the inner toe on the average
  - the cow steps down with the outer toe first
- these criteria provide stability – but only on soft ground!

**CRITICAL**

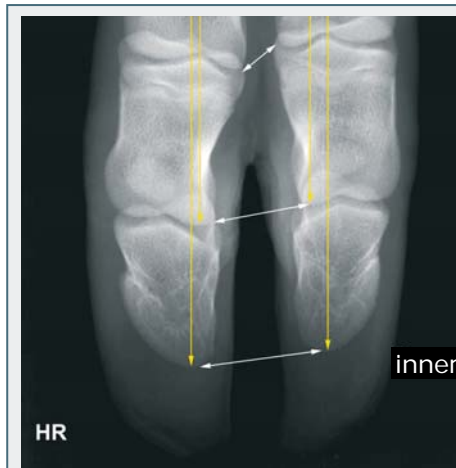
On hard ground the outer claw alone must absorb the peak load of the entire body weight!

**OPTIMAL**

On soft ground the body weight is evenly distributed throughout the total surfaces of the outer and inner toes.

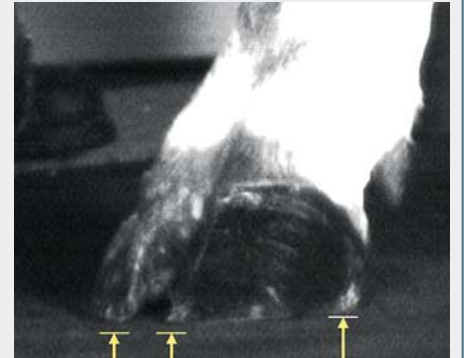
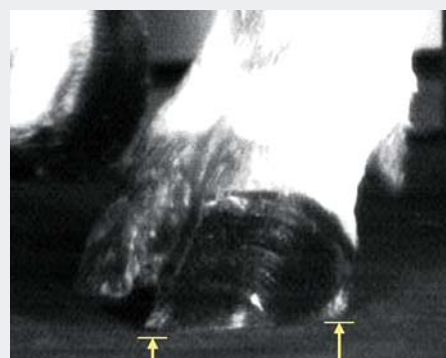
- natural load conditions, excessive pressure is prevented
- optimal blood circulation and nutrient supply, because cows are more active
- => horn quality improves
- => the horn becomes more resistant to physical, chemical and bacterial effects

... and that is why cows choose soft ground.



Length difference of inner and outer toes

Source: Muggli, E., 2007, University Zurich; images: Karl Nuss, Munich



Motion sequence of a cow stepping down

Source: Schmid, T. et al., 2008; images: Karl Nuss, Munich



On soft KURA rubber mats the claws can sink in about 3 or 4 mm – which is exactly what cattle require naturally

