The impact of claw health and lameness on fertility in Austrian dairy herds

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Is lameness a problem in dairy herds?

- **productivity** (Cook and Nordlund, 2009)
  - fertility
  - milk production
  - economic
- **animal welfare** (Tremetsberger and Winckler, 2015)
- **common reason for culling** (Zuchtdata, 2015)
Culling and death in Austrian dairy herds

Zuchtdat, 2015
Efficient Cow
In total 167 herds with ~5400 dairy cows were observed for 1 year.
Gathering Data

- Animal recording data monthly
- Farmer: observations
- Vet: diagnosis
- Animal recording: Basis numbers, ketose, hoof-trimming
  - at every milk recording event (monthly)
    - bodyweight, BCS, lameness scoring, ration, concentrate intake
- Animal breeding organisation
  - 1x linear description of all cows
- Food analyses 8 times during the year
Aim of the study

- Efficiency of dairy cows in Austria
- This talk:
  - The impact of lameness on fertility
    - several fertility parameter
Data was taken from

- RDV Data (animal recording data)
- lameness scoring
- claw health data
Sprecher et al., 1997
Creating lameness groups

- never lame 1
- <3 x lame (score 2) 2
- >3 x lame (score 2) or score 3 3
- lame score 4 4
- severely lame (score 5) 5
Electronical documentation
### Gesundheitsmonitoring Klauenerhebung

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<tr>
<th>Arbeitgemeinschaft Österreichischer Klauenpfleger AÖK</th>
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**Klauenpflegeprotokoll vom:** letzte Klauenpflege am:  
**Betrieb (LFBISNr.):** Milchleistung $\bar{kg}$/Jahr:  
**Gesamtkuhzahl:** Klauenpflege durchgeführt bei Tieren  
**Haltung:** Anbindeh. | Laufstall  
**Stand/Länge:** kurz | mittel | lang  
**Entmistung:**  
**Liegefläche:** Gummi | Beton | Hoch- | Tiefbox  
**Einsreu:** Stroh | Sägespäne | Strohmehl  
**Bodenbeschaffenheit:** Spalten | planbefestigt (Gussasphalt, Beton, Gummi) | Tretmist  
**Weidegang:** ja | nein

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Results
Lameness for 3 breeds in first, second and third+ lactation
Most frequent lesions in different cattle breeds
Impact on fertility parameter
Calving interval

![Bar chart showing calving interval and lameness groups for different cattle breeds: Braunvieh, Fleckvieh, and Holstein.](chart.png)
Lameness within the first 100 days in milk

- Brown Swiss: Median calving interval = 392 days, 402 days
- Fleckvieh: Median calving interval = 374 days, 379 days
- Holstein: Median calving interval = 390 days, 402 days

Legend:
- Green: Not lame
- Orange: Lame

DIM: Days in Milk
### Success of first AI

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<td>50,0%</td>
<td>2311</td>
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<td>47,1%</td>
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Discussion

- Different breeds are susceptible to different lesions
- Brown Swiss, Fleckvieh, Holstein
- Calving interval increases
  - 30 days by cows moderate/severely lame compared to non-lame cow
  - First 100 DIM are highly important (plus 10 days CI)
- First service conception rate decreases
  - NEB, laminitis, concurrent disease (endometritis)
Lameness is important issue in modern dairies

- Detect early
- Treat lame cows as soon as possible
- Perform regular hoof trimming to detect early lesions which do not yet cause pain and lameness
- Document claw health status for decision making
  - Establish breeding goals

Coming back to the aim of the bigger study:
  - Working on lameness increases efficiency on dairy farms
Efficient Cow

Thanks to all participating farmers and staff for gathering the data