Correlations between health and performance traits in Vorderwaelder and Fleckvieh cattle

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Outline

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Material

GMON: Recording of the (official) receipt diagnosis of veterinarians
- benefit for farmers: management tool
- benefit for breeders: performance test → new health traits and breeding values

OCB: Observations close to birth
- based on farmer-observed health data
- voluntary statements
- many informations: 1.4 million calvings since 2012
Material

GMON:

- Early reproductive disorders (EREPRO)
- Mastitis (MAST):
- Cystic ovaries (CYST)
- Milk fever (MF)
- Ketosis (KET)
Material

Observations close to birth (OCB):

- Retained Placenta
- Downer cow syndrome
- Umbilical hernia

Herkunftssicherungs- und Informationssystem Tier (HIT)
Schwarzwald (n= 4.561 Lactations)

Oberland (n= 14.913 Lactations)

Hohenlohe/Bauland (n= 8.027 Lactations)

FV organic 97,7 %
FV conv 2,4 %

VW=Vorderwaelder, FV=Fleckvieh

Material

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Material
Fleckvieh:
- most common breed in BW
- supra-regional
- first breeding values for health traits in 2013 (in BW)

Vorderwälder:
- local breed
- only in the Black Forest region
- no breeding values for health traits yet
- known as robust cattle
Material

animal health

- region (OL, HL, SW)*
- operating type (organic/conv)
- breed (VW / FV)**
- herdsize (small, medium, large)
- lactation number (1-5+)
- performance level (low, medium, high)

* OL=Oberland, HL=Hohenlohe/Bauland, SW=Schwarzwald; **VW=Vorderwaelder, FV=Fleckvieh
Questions (with focus on situation in Baden-Württemberg):

1. Can observations close to birth (OCBs) be combined with GMON data?

2. What factors do influence health traits?

3. How are health traits correlated to performance traits?
Results

1. Combination of GMON and OCB
   - Complement is possible
     - consistent trait recording
     - high positive correlations between traits
     - improving of data quality
Results

2. Significant influence factors

• Robustness of Vorderwälder cattle could not be confirmed
• No effect of region, except for ovarian cysts
• Increasing lactation number \( \rightarrow \) increasing disease frequency
• Ecological operating farms \( \rightarrow \) lower disease frequency
• Increasing herdsize \( \rightarrow \) decreasing disease frequency
• Performance level \( \rightarrow \) no clear trend
Results

3. Genetic parameters

- Heritabilities for health traits low and as expected
- Unfavourable correlation between fertility, metabolism and performance traits
- Partial positive correlations between diagnoses and lifetime production and effectiveness
Conclusion

Observations close to birth → valuable new source
→ encouragement of farmers

Vorderwälder: Amount of data not sufficient for breeding value evaluation yet

Use of auxiliary traits like the infra-red spectrum
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Thank you for your attention!
Material

Trait definition

• Early reproductive disorders (EREPRO):
  metritis, retained placenta, puerperal disorders, cullings due to fertility problems
  30 d after calving

• Mastitis (MAST):
  acute + chronic mastitis, cullings due to udder health problems
  10 d before – 150 d after calving
Material

Trait definition

• Cystic ovaries (CYST)
  30 d – 150 d after calving

• Milk fever (MF)
  milk fever diagnoses + cullings due to metabolic diseases
  10 d before – 10 d after calving

• Ketosis (KET)
  no breeding value established
  very important metabolic disorder