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A herd- and cow-specific decision support tool for control of mastitis

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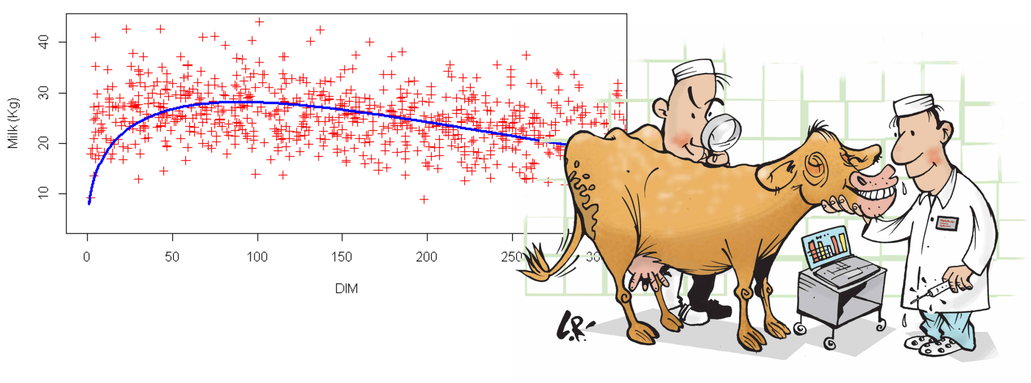
Mastitis is one of the most frequent and costly diseases in cows in developed countries. Cost-effective monitoring, control and prevention of mastitis are therefore important to improve productivity and animal welfare.

We will further develop an existing bioeconomic model to model the spread of pathogens causing mastitis within a dairy cattle herd. The model will then be used for a subsequent assessment of the impact of strategies on herd- and cow-specific level to monitor and control mastitis.

Prediction of the future production of cows

Herd-specific cow model



Modeling clinical / subclinical mastitis

Herd model including

calves | heifers | lactating cows | dry cows

→ milk production

- quarter level transmission
- environmental & contagious mastitis
- risk factors
  - DIM / lactation stage
  - parity
  - history of mastitis
- different pathogens / strains

Using estimated parameters of:

- Future production of cows
- Infection transmission and cure

Monitoring, control and prevention

- Treatment with antibiotics
- Culling
- Better milking hygiene

Introduction of new animals

- Introduction of new animals from other farms
- Biosecurity measures

Impact assessment

General Methods

Modeling will be performed using R.

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