Analysis of the dynamics of Staphylococcus aureus in two Danish dairy cattle herds

Kirkeby, Carsten Thure; Zervens, Lisa Marie-Louise; Toft, Nils; Farre, Michael; Hisham Beshara Halasa, Tariq

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Analysis of the dynamics of *Staphylococcus aureus* in two Danish dairy cattle herds

Carsten Kirkeby¹, Lisa Zervens¹, Nils Toft¹, Michael Farre², Tariq Halasa¹,³

¹ Technical University of Denmark ² SEGES Livestock Innovation ³ University of Copenhagen

**Aim**

To estimate the transmission dynamics for *Staphylococcus aureus* in two Danish dairy herds with 180 and 360 cows.

**Data**

- Sterile quarter milk samples were collected following pre-milking teat disinfection from all lactating cows each month during 2017.
- Samples were cultured and pathogens including *S. aureus* were identified following the NMC protocol.
- Herd 1 had approximately 208 *S. aureus* infected quarters at each sampling.
- Herd 2 had approximately 31 *S. aureus* infected quarters at each sampling.

**Results**

**Transmission rate**

- 0.0070 - 0.0133

**Duration**

- 169 - 196 days

**Transmission rates per quarter-day**

- 0.0133 (95% C.I. 0.001 - 0.0255) in herd 1 and 0.0070 (0 - 0.0177) in herd 2.

**Duration of infection**

- 169 days (95% CI: 169 - 197) in herd 1 and 196 days (95% CI: 15 - NA) in herd 2.

**Conclusions**

- Transmission rate for *S. aureus* was higher in herd 1 than in herd 2. This was expected because of the high number of new cases each month.
- The differences found in the transmission rate and the duration of infection between the herds in this study indicates that the transmission dynamics differ between herds, likely due to differences in management style, hygiene measures, milking equipment and genetic stock.
- Therefore advice on the prevention and control of IMI should be herd-specific.