Cure rates during dry period with or without antibiotic treatment at dry off

A non-inferiority randomized clinical trial

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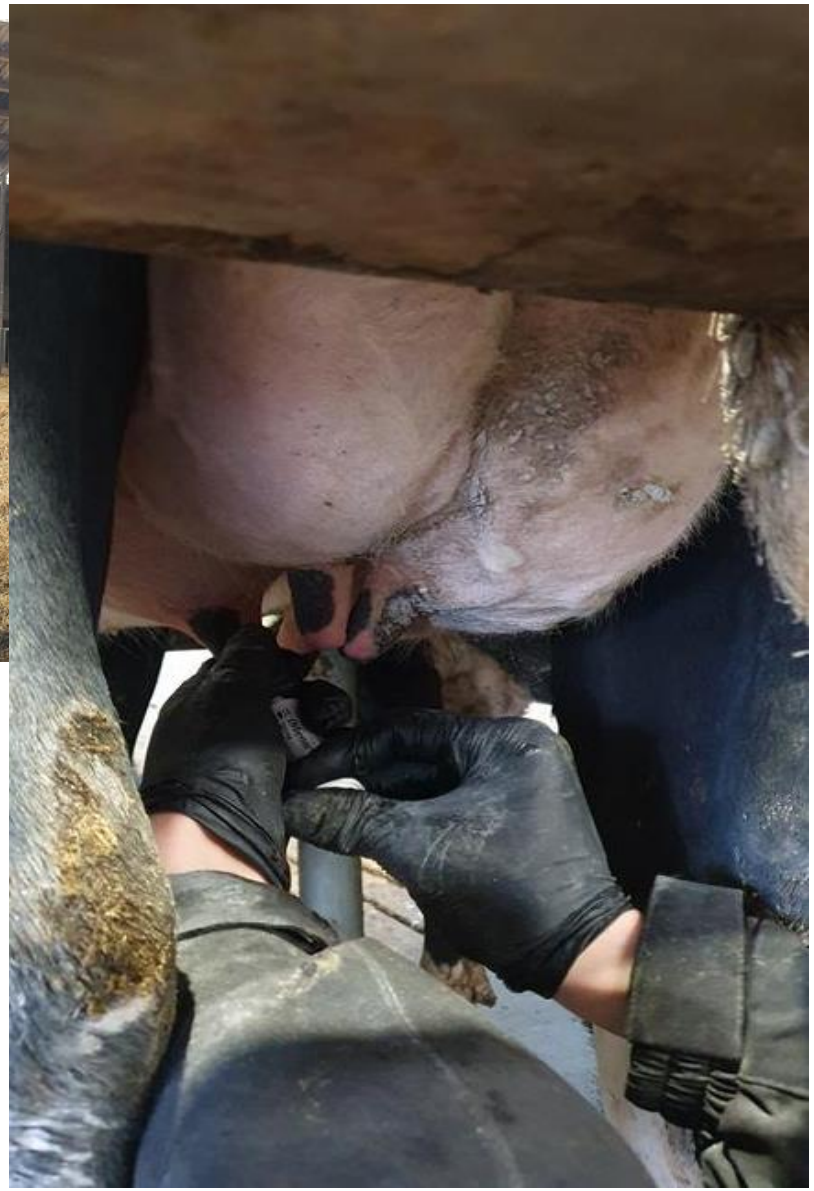
SEGES INNOVATION

What is dry period and dry cow treatment?



Dry period

Mastitis – global health problem

- 5-point plan
- Clinical mastitis cases ↓

Dry cow treatment

- Antibiotic
- Subclinical → healthy milk and cow
- Clinical → affected milk (and cow)

Background for this study

Antibiotic resistance

Antibiotic usage → Udder health

Blanket dry cow treatment (BDCT)

Danish legislation → SDCT

- > 200,000 cells/mL
- Pathogen detected

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Does it still make sense?

Purpose and objectives

Reduce antibiotic usage for dry off without decreasing udder health

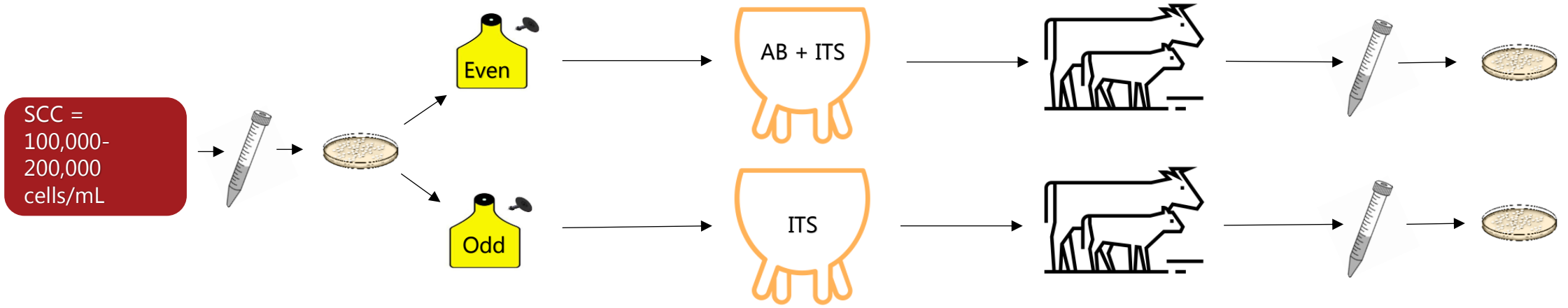
Noninferiority study

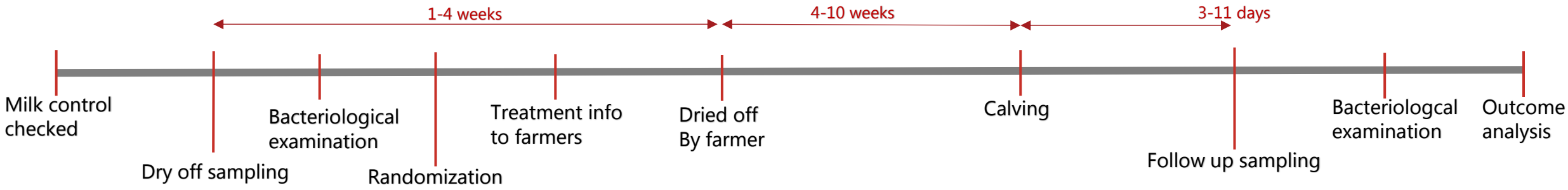
Compare DCT vs no DCT

- Bacteriological cure rate
- New intramammary infection rate (NIMI)
- Clinical mastitis

Design

Exclusion:
- All quarters uninfected/contaminated
- Antibiotic treatment
- Culled
- Lost pregnancy
- Clinical mastitis (cure+NIMI)
- Contaminated quarters (cure + NIMI)





Bacteriological cure and NIMI rates

Treatment

- Bacteriological cure = %
  - quarters
- NIMI = %
  - quarters
- Clinical mastitis = ?

No treatment

- Bacteriological cure = %
  - quarters
- NIMI = %
  - quarters
- Clinical mastitis = ?

Model building – bacteriological cure

Tested variables:

- Dry cow treatment
- Country
- Herd
- Pathogen
- Parity
- Clinical mastitis in the last lactation
- Quarter
- CMT score
- Somatic cell count in latest milk control
- Somatic cell count in milk sample, tested in lab

Final model: Cure ~ DCT, Pathogen, Herd

Discussion and conclusion

Bacteriological results

- DCT > no DCT

Udder health

- Clinical mastitis
- Transmission
- Infection duration

Reduction in antibiotic usage

Inclusion criteria

Farm

- Conventional
- Milking parlour
- No *Salmonella dublin*
- Herd size ≥ 200 cows
- Convenience sampling – praktisk årsag …

Cow

- SCC of 100,000-200,000 cells/mL
- No AB for 1 month before dry off sampling
- 4 functional quarters

The study

Randomized

Treatment

- AB + ITS

No treatment

- ITS

1-4 weeks before dry off

3-11 days post-calving

Exclusion

- Uninfected or contaminated in all 4 quarters
- Antibiotic
- Culled
- Lost pregnancy
- Clinical mastitis → cure + NIMI
- Contaminated quarters → cure + NIMI