

# On CNS

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# On CNS...

CNS = **C**oagulase **N**egative **S**taphylococci

- However: not all *S. aureus* are coagulase positive – and
- Not all Non-aureus are coagulase negative....
- Hence the name NAS = **N**on-**a**ureus-**S**taphylococci

NAS are the most frequently isolated pathogens from bovine milk (Hamel et al. Veterinary Microbiology 2020)

However: not all NAS are equally associated with:

- Decrease in milk yield
- IMI
- Contamination of milk samples

# On NAS and contamination of milk samples

NAS-species can occur in:

- Farm environment – e.g. bedding material and dust
- On udder skin
- Teat canal
- In milk-producing tissue
  
- In addition, different NAS-species have different shedding patterns
  
- In conclusion: some NAS-species might cause underestimated contamination of milk samples leading to false diagnose of IMI...

# On NAS and contamination of milk samples

NAS-prevalence (often described as most prevalent):

- S. haemolyticus
- S. chromogenes
- S. epidermidis
- S. xylosum

NAS associated with IMI:

Studies differ but likely candidates include:

- S. simulans\*
- S. chromogenes\*
- S. epidermidis

# On NAS and contamination of milk samples

Examples of NAS-associated with other sources than IMI:

*S. haemolyticus*, e.g. dust

*S. microti* (environmental source unknown)

*S. succinus*\*

*S. equorum*\*

*S. vitulinus*\*

\*Associated with colonization of teat canal

# Comparison

- Do not consider Nas as a uniform group
- More studies are needed but tendencies are already apparent

For more information – use molecular diagnostics.... 😊

# Which molecular diagnostics can help with mastitis problems?"

PCR

Serotype

MALDI-TOF

Wholegenomesequencing

What to use – and when?

# PCR in brief

High sensitivity

Specificity depends on primers

You only find what you are looking for

What ct-values are relevant?



# Serotypes

- Classification based on distinctive variation within species.
- Demands culture
- Not necessarily relevant in itself

# Wholegenomesequencing

- Read-out of all DNA
- Demands culture
- E.g. chronic or new infection?
- E.g. virulence factors, AMR etc.

# MALDI-TOF

- Ribosomal protein ("Fingerprint")
- Demands culture
- Fast
- "What is in this sample"?

# MALDI-TOF

