

Risk factors associated with *Mycoplasma bovis* disease in Danish dairy herds 2010-2014



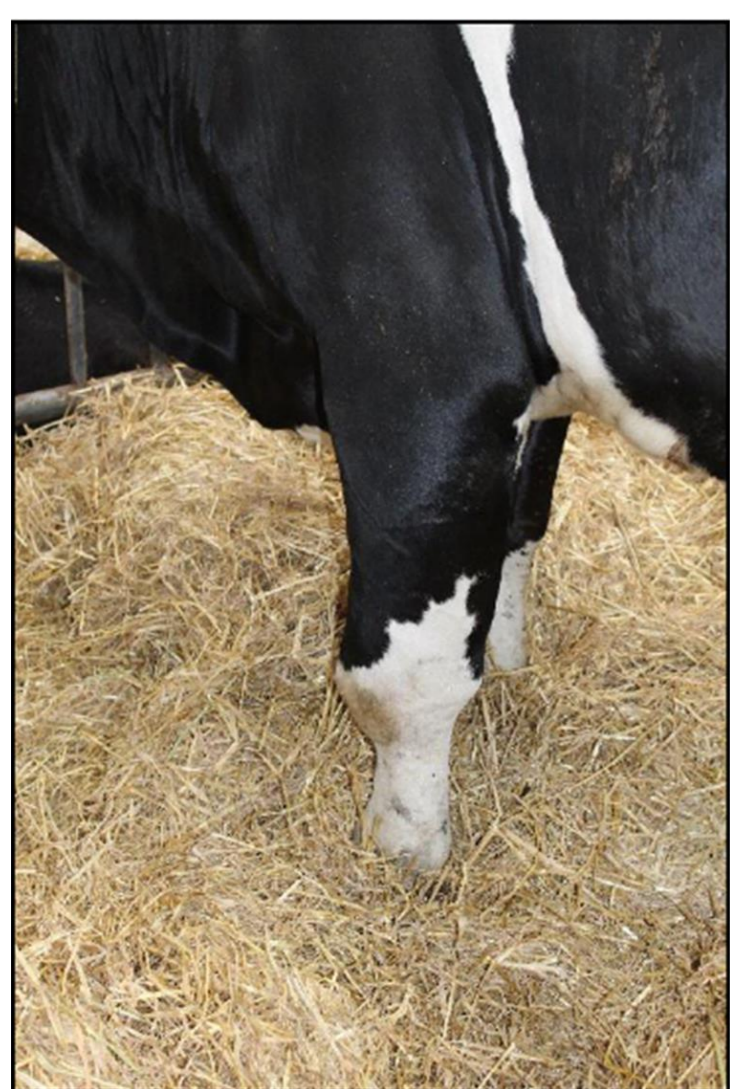
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Background

- Increased focus on *Mycoplasma bovis* in the Danish cattle sector due to many atypical outbreaks since 2011
- Arthritis, pneumonia and mastitis in cows
- Arthritis, pneumonia and otitis media in calves
- Difficult to treat so culling or euthanasia often needed to control the infection → financial and welfare losses
- Little available knowledge about prevention and control

Study objective

To identify **risk factors** associated with clinical outbreaks of *Mycoplasma bovis* related disease in Danish dairy herds

Materials & Methods

- **504 dairy herds** identified to contact based on:
 - test-positive in bulk tank milk ELISA or PCR
 - knowledge about clinical disease
 - previous or current project herds



- **Online questionnaire + telephone interviews:**
 - Questions on farmers' perception of outbreaks
 - Outbreak characteristics and management

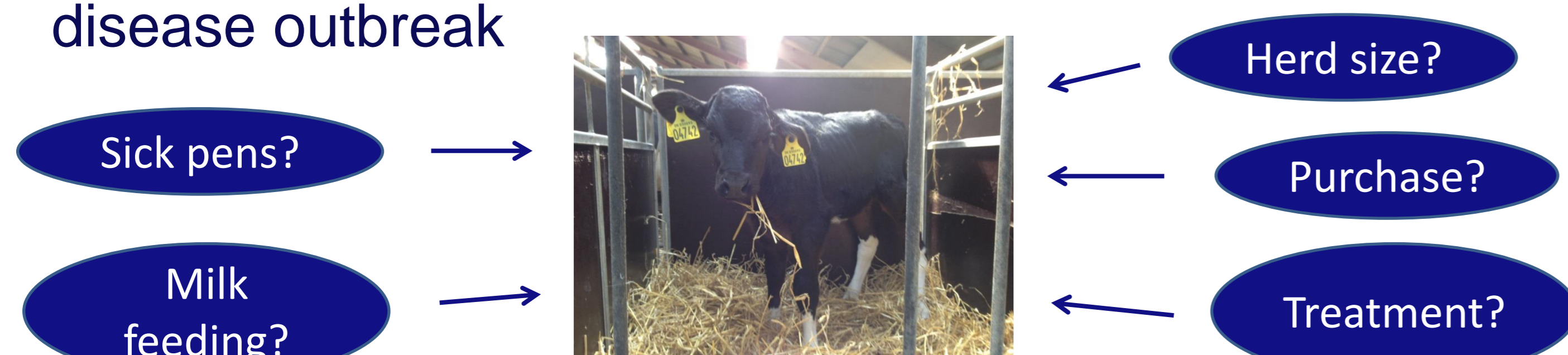


First question to the 324 dairy herds reached

Has there been an outbreak of *Mycoplasma bovis* in your cattle herd within the last 3 years?

- **No**, I have not had any sick animals with clinical signs of *Mycoplasma bovis* or **No**, I have not had an outbreak, but there have been sick animals that could have been infected with *Mycoplasma bovis* (**n = 201**)
- **Yes**, I have had a few sick animals with diagnosed *Mycoplasma bovis* or **Yes**, I have had an outbreak (sudden or large increase in disease occurrence) that could be caused by *Mycoplasma bovis* (**n = 123**)

- **Logistic regression** of 21 risk factors for clinical disease outbreak



Results

Clear risk factors for disease outbreaks

- **Herd size:** OR = 2.7-11.3 for 450 vs. 300 cattle^a
- **Calving area:** OR = 1.4-4.9 for >2 cows vs. 1 cow^b
- **Calves contact** to other age groups: OR = 1.3-6.3^b
- **Sectioning** OR = 0.1-0.6^b for >5 movements vs. <4
- **Use of cow sick pen:** OR = 1.3-4.1^b for No vs. yes

^aP<0.001, ^bP<0.01

Other factors associated with disease outbreaks

- **Young stock on pasture** increased the risk
- **Number of employees** increased the risk
- **Increased cow group size** increased the risk
- **Cleaning facilities at entrance** increased the risk*
- **Cleaning of calf hutches/pens** increased the risk*

*Might be due to actions done as part of limiting the outbreak

Conclusions

- Focus on contact between animals (sectioning)
- Protect the calves (contact and milk)
- Use sick pens for cows
- Increased prevention and monitoring in large herds
- Good internal biosecurity! Isolate the sick!