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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**
*Have you had an outbreak of Mycoplasma bovis in your cattle herd within the last 3 years?*

**Yes**, I have had a few sick animals with diagnosed *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*)

**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

**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. Isolate the sick!
- Increased prevention and monitoring in large herds
- Good internal biosecurity!

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