Bovine Abortions and Stillbirths in Denmark 2015 to 2017

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Infections are the most common cause of bovine abortion. Here we report recent diagnostic findings in bovine abortion material from Denmark, a country with a large dairy sector and high animal health standards. This study was conducted in order to gain in-depth knowledge on infectious causes of abortions i.e. to identify and localize infectious agents in placental and foetal tissues. The cultivation-independent methods Fluorescence in situ hybridization (FISH) and second generation sequencing were applied additionally to routine histopathology and bacterial cultivation.

**STUDY POPULATION**

Danish Holstein 62%
Danish Jersey 13%
Crossbreed 9%
Danish Red 7%

0.8% of reported abortions during study period

**SAMPLE MATERIAL**

**RESULTS**

**BRUCELLA ABORTUS CULTIVATION**

All foetal organ pools were negative for *Bruella abortus*. In 90% of the cases, a blood sample of the dam was submitted. All samples were negative for maternal BVDV antibodies.

**HISTOPATHOLOGICAL SCREENING FOR NEOSPORA CANINUM**

Neosporosis was diagnosed in 30 out of 162 abortions (19%) based on findings in HE stained tissue sections of brain, heart, and liver.

**ELISA**

In 30% of the cases, a blood sample of the dam was submitted. All samples were negative for maternal BVDV antibodies.

**SECOND GENERATION SEQUENCING**

All abortion samples were negative for DNA from the following known abortifacients:
- *Chlamydia/Porachlamydia spp.*
- *Brucella abortus*
- *Campylobacter fetus*
- *Pajaroellobacter abortifaciens* (epizootic bovine abortion)
- *Listeria ionanov*

Leptospira interrogans DNA was detected in one liver sample. Coxiella burnetti DNA was detected in samples from four abortions.

**CONCLUSIONS**

- Neosporosis was the most frequently diagnosed infection.
- No epizootic abortifaciens were found on study population level, however, due to very few abortions submitted per herd, no conclusions can be drawn on herd level.
- Fungi seem to play a minor role as abortogenic agent in Denmark.