

Pinkeye - is it a problem in Denmark?

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Introduction:

Infectious Bovine Keratoconjunctivitis (IBK) commonly known as 'Pinkeye' is a painful, infectious and highly contagious ocular disease in cattle characterized by conjunctivitis and keratitis in mild cases to corneal ulceration and even blindness in more severe cases. *Moraxella bovis* is considered to be the major causative agent of IBK but other pathogens as *Mycoplasma spp.*, *Chlamydia spp.*, bovine herpes virus 1 and *Moraxella bovoculi* is also isolated in cases of IBK.

Prof. Mørkeberg described the first clinical cases of IBK in Danish herds in 1922 after a number of cases had occurred in Denmark in 1920 (Pedersen, 1973). Since then plenty of cases and outbreaks are reported. Over the past couple of years SEGES more frequently has received reports of IBK outbreaks from Danish farmers and veterinarians. Moreover, the incidence of *Mycoplasma* outbreaks has increased during the past 10 years and *Moraxella bovoculi* are more frequently isolated in eye swabs from cattle with clinical symptoms of IBK. Often IBK is diagnosed based on clinical examination without laboratory identification and for that reason we do not know much about the incidence of the disease and the distribution of the different pathogens. Therefore, SEGES decided to carry out a questionnaire survey with the aim of getting an idea of the occurrence of IBK in Danish dairy and veal calf herds during the period autumn 2018 to autumn 2019. To our knowledge this has never been done in Denmark before and we here present the first results from this small pilot study.

Materials and methods:

Of the 2765 Danish dairy herds and 628 veal calf herds we randomly selected 250 and 100 herds respectively. We contacted the farmers during autumn 2019. Before we went through the survey with the farmer, we asked open questions about IBK and what to look for. In case of absence in knowledge of the disease we guided them through clinical signs and/or emailed pictures of the disease.

Of the 350 randomly selected herds, 41 farmers had either sold their cattle or didn't want to participate in the survey and 110 didn't answer the phone. In total 150 dairy farmers and 49 veal calf producers responded to our survey.

Results and Discussion:

Overall 12.7 % of the dairy farmers and 20.4 % of veal calf producers answered yes to having observed IBK in their herd during the last year. The percentages dropped to 4.7 [95%CI: 1.3%-8.0%] and 16.3 [95%CI: 6.0%-26.7%], respectively, for herds with IBK problems (i.e. more than 5 observed clinical cases of IBK. This difference concerning herd type was statistically significant ($p=0.012$). Concerning the veal calf herds there was a significantly positive relationship with herd size. Among the 15 herds with IBK problems, 33.3% of these also had *Mycoplasma* cases during the past year, compared to 10.9% in the group without IBK problems. For both milk producing herds and veal herds there was a significant positive association ($p=0.026$, Fisher's Exact test) between IBK problems and *Mycoplasma*. Future studies are suggested to clarifying possible relation between *mycoplasma spp.* and IBK.

Conclusion:

The occurrence of herds with IBK problems (i.e. more than 5 observed clinical cases of IBK in the period autumn 2018 to autumn 2019) was significantly higher for veal calf herds compared to dairy herds. Among the herds with IBK problems there was a significant positive association ($p=0.026$, Fisher's Exact test) between IBK problems and *Mycoplasma* cases during the past year. Because the sample size was small, and this was the first study in Danish cattle herds regarding the occurrence of herds with IBK we cannot draw a firm conclusion whether IBK is an increasing problem in Denmark or not. However, the results of the survey suggest that the occurrence of IBK during the last year in Danish dairy and veal calf herds was higher than assumed and at a level similar to other endemic infectious diseases like *Mycoplasma*.

Reference:

Pedersen K. B. 1973. Infectious keratoconjunctivitis in Cattle. Doctoral Thesis. Royal Veterinary and Agricultural University, Copenhagen Denmark.