7. Summary

Investigations about connections between *C. burnetii*- und Chlamydien-infections in dairycows and farmworkers

Purpose of this work was to collect actual data about the prevalence of *C. burnetii* and Chlamydia on farms with infertility problems in cattle. Based on this data we calculated the risk of the farmers to get infected with *C. burnetii* and Chlamydia themselves.

In 1998 262 farmers including their families from 105 dairyfarms as well as a control group were tested for antibodies against *C. burnetii* and Chlamydia.

Additionally 1167 dairy cattle located on their farms were examined for antibodies and antigen of these bacteria in serum samples and cervical swabs.

1. Comparing the serological results of *C. burnetii* antibody ELISA in farmers and the control group shows a statistical significance towards seropositive farmers (16%) verses the control group (4%) expressed in the p-value 0.0029.
2. The commercially available *C. burnetii* antigen ELISA (r-biopharm, Darmstadt) is able to detect 200000 *C. burnetii* particles, showing a higher sensitivity than the common STAMP staining. Because of unspecific reactions (based on protein G or/and A) the test was used after digesting the samples with proteinase K. With the r-biopharm, Darmstadt test kit it was easy to test a high number of samples.
3. There was no significant differences seen comparing three chlamydia-antibody ELISA tests and the CF for the examination of bovine serum samples.
4. There was a relationsship of *C. burnetii*- and Chlamydia infections with infertility problems. A significant detection of *C. burnetii* in dairy cattle with abortion and placental retention and a detection of chlamydia in dairy cattle with vaginal discharge and frequent unsuccessful artificial insemination was confirmed.
5. Farmers of dairy herds showing seroprevalence of ≥ 20% of *C. burnetii* were more often detected with antibodies against

C. burnetii (19.9%) than farmers (7.4%) whose dairy cattle had a seroprevalence of < 20%.

6. The consumption of raw milk is a strike out risk factor for *C. burnetii* infections. 16.9% of all farmers drinking raw milk antibodies against *C.burnetii* were detected. On the other hand only 6.5 % of farmers not consuming raw milk were showing antibodies (p-value 0.04).
7. There was no higher risk for dairy farmers to get infected with *C. psittaci* compared to the control group (p-value 0.700).
8. Having poultry seemed to be a risk factor for *C. psittaci* infections in farmers (p-value 0.003).