

Research project IZS VE 11/10

***Coxiella burnetii* infection in dairy cows and goats: assessment of diagnostic methods, molecular characterization of strains and evaluation of immune response in shedders**

Project coordinator: Antonio Barberio

The main objectives of this research are :

- to estimate the herd level sensitivity and specificity of diagnostic tests (ELISA and PCR) on individual milk samples;
- to assess the efficacy of a diagnostic strategy based on combined results of ELISA and PCR assays on bulk tank milk (BTM) for the detection of infected dairy herds/flocks compared to the performance of individual tests;
- to evaluate the dynamics of the antibodies response against phase I and phase II antigens in seropositive animals, and to perform the molecular characterization of strains from cattle and goats.

To achieve these general objectives the following steps will be followed:

- evaluation of characteristics (sensitivity and specificity) of individual tests at animal and herd level and comparison with results of BTM testing in the detection of infected dairy herds/flocks of cows and goats;
- estimate of minimum number of positive animals needed to have a positive result from BTM testing;
- evaluation of the dynamics of antibodies response against phase I and phase II antigens in seropositive animals in correlation with active shedding of *C.burnetii*, days in milk, and age;
- molecular characterization (MLVA typing) of the strains isolated from cattle and goats.