Advice 25-2010 of the Scientific Committee of the FASFC on surveillance, prevention and control of *Coxiella burnetii* in cattle

With the aim to work out a program for surveillance, prevention and control of *Coxiella burnetii* in cattle, several questions were asked to the Scientific Committee.

Cattle, like small ruminants, are considered to represent a reservoir for *Coxiella burnetii*. Aerogenic transmission of *Coxiella burnetii* strains between cattle and small ruminants, and vice versa, is considered to be possible. People can be infected by *Coxiella burnetii* strains from cattle. There is uncertainty about the type and virulence of circulating *Coxiella burnetii* strains in cattle in Belgium.

A positive farm is a farm where an RT-PCR positive result has been obtained, independently of the serological result (ELISA).
Based on the recent serological winterscreening (2009-2010), it seems that 55% of all the cattle herds have been exposed to *Coxiella burnetii*, with a relatively weak intra herd prevalence. The epidemiological situation in the cattle population appears to be stable and endemic. 1% of all the abortions in cattle can be assigned with certainty to *Coxiella burnetii*.

The Scientific Committee recommends the following monitoring plan in cattle. In order to follow the evolution of the incidence, it is recommended to continue the at random serological winterscreening for all the age categories above 6 months. In order to detect the presence of the bacteria in dairy farms, it is recommended to test the tank milk by RT-PCR and ELISA in parallel. In order to detect the presence of the bacteria in beef cattle, vaginal swabs from animals of each farm should ideally be tested by RT-PCR. Another option, more interesting from a cost/benefit standpoint, is to rely on the annual serological at random screening mentioned above, to detect seropositive animals, and to confirm the presence of the infection by a RT-PCR test on vaginal swabs of the seropositive animals. It is also recommended to continue the abortion protocol (PCR test on aborted products, with differential diagnosis of the other causes of abortion) in all type of cattle farms, based on the compulsory declaration of the abortions.

The aerosols from aborted tissues or manure from infected animals present the major risk of transmission of *Coxiella burnetii* to humans. The aborted tissues from animals infected by *Coxiella burnetii* can contain up to 10^9 bacteria par gram of tissue. The populations at risk for the aerogenic transmission or the transmission by direct contact are the farmers and their family, the veterinarians, the animal transporters, the persons visiting the pedagogical farms, the parks, the zoos, the slaughterhouses workers and the laboratories employees having to manipulate infected animals or material. However, the risk from cattle is weaker than from small ruminants (goats) because of the lower frequency of abortion, and because the excreta of cattle are mostly stored under the form of (less infectious) liquid manure. In spite of the high seroprevalence of infected cattle herds in Belgium, no human case of Q fever related to cattle exposure has been reported up till now in our country. Recommendations are given concerning the measures to be taken during parturition, and concerning the treatment of aborted tissues, the feces and liquid manure. Because people are mainly infected by inhalation of with *Coxiella burnetii* contaminated dust and aerosols formed during the excretion of the bacteria during parturition or abortion and/or via excreta from infected animals, most of attention has to be drawn on the correct elimination of the foetal membranes or abortion products and on a controlled spreading of the manure, under circumstances with minimal risk of dispersion of infected dust or aerosol.

Based on epidemiological data, the public health risk of infection after consumption of raw milk is considered to be “weak to negligible”, except for the people at risk, for which the risk has to be considered to be “real” (young children, old persons, immunodeficient persons, immunodepressed persons (chemotherapeutic treatment, systemic treatment with corticosteroids, etc.), pregnant women, and persons suffering from cardiac disease or valvulopathie). It is advised against the consumption of raw milk or raw milk products by these persons at risk. Pasteurization is an effective measure by which all the vegetative germs of the milk, including *Coxiella burnetii*, are killed. Pasteurisation of the milk from infected exploitations is a management measure aiming at protecting the people against infection by a certain number of pathogen species, including *Coxiella burnetii*.

Several preventive measures are also recommended to protect the non-infected herds, namely to apply general biosecurity measures and to avoid the introduction of animals which aborted following infection of *Coxiella burnetii* or which are coming from infected farms. At the moment, there is no vaccine available for cattle. If a vaccination policy is aimed for following a favorable advice of the European Medicines Agency on the use of the vaccine in cattle, it should then be recommended, for an optimal efficiency, to use the vaccine preventatively in the non-infected animals, and this before getting pregnant.

The full text is available on this website in dutch and in french, respectively under the section “Wetenschappelijk Comité/Adviezen” and “Comité scientifique/Avis”.