Respiratory problems calves

Respiratory problems, together with diarrhea, are the main disease problems in calves up to 6 months of age. In the airways, natural defense mechanisms are present to eliminate invaders such as bacteria and viruses. If this does not work properly, due to a reduced resistance and/or a larger number of pathogens in the air, calves can get pneumonia. The first approach to combat pathogens is to detect the pathogen. It is also important to check the housing and climate conditions.

Causes of airway problems in calves

Several factors may play a role in respiratory problems, namely:

- One or more pathogens (infectious cause of the respiratory problems);
- A reduced resistance of the calf;
- Suboptimal environmental factors (climate / housing).

If there is an infectious pathogen, such as bacteria, viruses and/or parasites (lung worms), these germs can play a role:

Bacteria

Important bacterial causes of lung problems include *Pasteurella multocida*, *Mannheimia haemolytica* and *Mycoplasma bovis*. Some bacterial species may be present in the nasal cavity of a healthy calf, but will induce respiratory problems when one or more attenuating factors are present such as a reduced resistance and/or suboptimal environmental factors. In some cases, salmonella bacteria may also cause lung problems.

Viruses

In calves, the BRS-virus (BRSV) is a major viral cause of pneumonia. Other viruses that may play a role in respiratory tract infections are para-influenza type 3 (PI-3) and BVD-virus. The infectious disease IBR can also cause problems with calves, but this does not happen so often.

Lungworms

Calves in grazing pastures can get lungworm infection. The symptoms may vary from mild cough and accelerated breathing to severe cough, wasting and even death. At the beginning of the disease process, coughing mainly occurs after sudden physical efforts. The symptoms can be aggravated after infection with, for example, one of the aforementioned bacteria. Regularly there is a primary viral infection followed by infection with one or more bacteria. A structural approach is needed to cope with airway problems in calves. This begins with the diagnosis.

Clinical signs

Calves with respiratory problems may have one or more of the following symptoms: slow movements, nasal excretions, coughing, accelerated breathing, (high) fever and reduced growth. This can result in growth retardation, higher mortality rates, increased antibiotic use and a lower milk production in the future (in case of dairy cattle). Therefore, it is important to get grip on airway problems, especially because these problems can get a chronic character and then these problems are even harder to combat.

Diagnosis

The diagnosis of respiratory diseases in calves consists of several parts:

a. Long fluid collection. Early detection of bacteria, and the identification which bacteria play a role in the respiratory infection, can be done by means of a lung lavage. The early detection of the bacterial cause is necessary for adequate treatment. Long lavages are performed by the veterinarian in acute sick animals. Important in performing lung lavages is that the tested animals have not been treated with an antibiotic. A selection of three calves is sufficient per group (herd). The laboratory can examine the lung fluids on the presence of mannheimia, pasteurella and mycoplasma. If one or more bacteria are detected, the antibiotic sensitivity testing can be performed from these bacteria. The result of an antibiotic sensitivity testing shows which antibiotics can be used to treat the diseased calves effectively (bacterium sensitive to which bacteria).

b. Post-mortem examination. During post-mortem examinations, the airways are first evaluated macroscopically and then with a microscope. On the basis of the macroscopic findings, follow-up examinations will be carried out. A general bacteriological examination is often part of it. If there are indications, virological tests will also be performed on the presence of BRSV, PI-3 and/or IBR.
If bacteria are grown, then it is also examined for which antibiotics the relevant pathogen(s) are sensitive. Please send a calf that died as soon as possible to the laboratory for post-mortem-examinations.

c. Blood analyses. In cases of respiratory problems, blood is usually taken twice; at the time of the outbreak and three weeks later. In this way, it can be examined whether there has been a significant increase in the amount of antibodies to certain pathogens (including PI-3, BRSV, mycoplasma and salmonella).

d. Colostrum check. For the prevention of other respiratory diseases among the youngest calves, it is important that calves have absorbed sufficient antibodies immediately after birth. After all, during that period the calf itself has an insufficiently developed immune system. The absorption of protective antibodies (IgG) from colostrum can be measured at the laboratory.

Treatment

The approach to combat respiratory problems, including prevention of respiratory problems, consists of a number of components and can vary from one farm to another. The advice is to make a plan together with your veterinarian.
Determining the cause of the respiratory problems is necessary for adequate treatment and possibly adjusting the treatment strategy. Diagnosis is also important in the context of prevention.

Climate and environmental factors

The climate in the stable is an important factor in the occurrence of respiratory infections. In a poor stable climate, an infection leads faster and easier to disease and a smooth recovery is hampered. Experts can analyze professionally the stable climate on your farm.

Vaccination

Depending on the cause / causes of the respiratory disease, vaccination can make an important contribution to the prevention of respiratory disease. Vaccination against BRSV is

a widely used. There are several vaccines on the market. Consult your veterinarian whether vaccination on your farm is useful.