



Pregnant? Avoid the lambing period

During spring, the Veekijker receives many queries about abortion, premature births, stillborn and weak lambs in small ruminants. Abortion is a regular occurrence at sheep and goat farms, as a result of both infectious and non-infectious causes. Zoonoses are commonly occurring infectious causes of abortion, which can also result in human illness. Although there is limited risk of illness in people, certain groups of the population run the greatest risk, including young children, the elderly, immunocompromised people and pregnant women. The main pathogens of abortion are *Listeria* spp., *Campylobacter* spp., *Chlamydia* spp. and *Toxoplasma gondii*. In the case of abortion, relatively large volumes of these pathogens can be excreted in the immediate vicinity, thus increasing the risk of infection. It is

also useful to be aware that many of the pathogens are latently present in sheep and goats. Intensive contact with sheep and goats is therefore strongly inadvisable for anyone at increased risk, even outside the lambing season.

Each year, GD has contact with women who are or have been unaware of the risk of contact with lambing sheep or goats. There is little information regarding the number of women suffering a miscarriage due to infections caught via lambing sheep or goats. However, it is important that pregnant women avoid contact with small ruminants where possible, as a precaution, that they certainly do not assist in lambing sheep and goats and that they also avoid contact with potentially contaminated materials.



Submitting foetus and placenta important for diagnosis of abortion

Abortion, premature births, stillborn and weak lambs form a regularly occurring problem in small ruminants. Examination of the aborted foetus and placenta is the most suitable method of arriving at a diagnosis. If only part of a placenta is submitted, it is important that this part also contains cotyledons (the so-called 'roses'). Cotyledons are the spherical structures of the placenta where the exchange of nutrients and oxygen occurs between the maternal animal and

foetus. When the abortion is caused by an infection, abnormalities are often found here. The amnion does not contain any cotyledons and is therefore less useful for examination purposes.

Would you like to know more about the importance of abortion diagnostics and the importance of submitting the foetus and placenta? Scan the QR code below and listen to the podcast.



Copper intoxication in sheep

A veterinarian recently reported that a backyard farmer of Zwartbles sheep had lost a two-year-old sheep as a result of copper intoxication. The same farmer had previously lost a sheep last year, without any further investigation taking place. The sheep at this farm are not lambed, and are fed an unknown volume of concentrated feed daily. They are kept in a pasture around the farm. The animal in question suddenly stopped eating and subsequently died. Pathological examination showed the animal to be overly fat, to have yellow mucosa and an abnormal

liver and kidneys. Copper accumulation tends to show values in excess of 600 ppm in the liver, and this figure was more than 2000 ppm in the case in question. There has been no clarification regarding the source of the excess copper level in this animal at this farm. The feed label of the concentrated sheep feed does not give an increased copper ratio in the feed. However, there is no certainty regarding what was fed in the past. The advice is to recalculate the ration fed to the other animals and to ensure that it does not contain any supplementary copper. Also

important is to avoid stress wherever possible in order to limit the risk of copper being released from the liver tissue, which would then result in clinical signs of copper intoxication.

Mastitis during mild winters

Over the past winter months, GD received a number of questions regarding mastitis in sheep. There were a number of cases of acute mortality after the ewes had been brought in for lambing. It is a common misconception that sheep will not require additional feed during mild winters with plenty of grass available. Mastitis, extended milk fever and rickets are all disorders which occur to a greater or lesser extent each year. In nearly

all cases, these disorders are related to the ration fed to gestating animals. In winters with abundant grass, free-grazing sheep are often not provided with supplementary feed. While a mild winter with plenty of grass has advantages, it also has disadvantages, particularly in very wet weather when the dry matter content of the grass is continually low. Under such circumstances, sheep need to consume vast quantities of grass to meet

their nutritional needs. If they fail to do so, there are consequences. Not only for the sheep themselves, but also for the vitality of their lambs and for the colostrum and milk production. It is essential to feed gestating sheep well, particularly during the final weeks of gestation.

Lameness following the use of Draxxin®

At the end of December, a goat was submitted for pathological examination after showing paralysis symptoms in its rear left leg. The anamnesis showed the animal to have a 'knuckled fetlock', not bearing weight on the leg. The animal had recently received an intramuscular injection of Draxxin® to treat respiratory problems and lameness. The left leg had been swollen for a period of four

weeks. At the end of this period, the abnormal gait continued unchanged. The pathological report referred to fibrosis in the hollow of the knee in the rear left leg, with a diameter of approximately 8 centimetres, whereby the *Nervus ischiadicus* was involved, as was the left popliteal lymph node. Consequently, the animal could no longer fully extend the lower limb. These clinical

signs are in keeping with complaints received in the past following treatment with Draxxin®. GD advises veterinarians and farmers to report any side effects of medication or products used to the supplier in question or to the Dutch Veterinary Medicinal Products Unit (Bureau Diergezondheidsmiddelen).

Podcast 'trends from monitoring'

In addition to the Veekijker news, the trends from monitoring can now be followed at any time via a podcast. This podcast explains any striking signals detected in animal disease monitoring of sheep and goats, with a further explanation by various experts in the

field of animal health. The podcast is published at least four times a year and can be found on the GD website and Spotify. Want to automatically keep up to date? Why not subscribe to the podcast via www.gddiergezondheid.nl/podcasts.



Animal health barometer Small Ruminants

| Disease/disorder/health characteristic | Brief description | Category | Quiet ¹ | Increased attention ² | Further investigation ³ |
|---|---|----------|--------------------|----------------------------------|------------------------------------|
| Articles 2.1.a and 2.1.b Designation of animal diseases 'Rules for Animal Health'/Implementing Regulation (EU) 2018/1882 of the Animal Health Law (EU) 2016/429 (Category A disease) | | | | | |
| Infectious pleuropneumonia in goats (CCPP) (<i>Mycoplasma capricolum subs. capripneumoniae</i>) | Never been detected in the Netherlands. | A+D+E | * | | |
| Foot and Mouth Disease (FMD) | No FMD in the Netherlands since 2001. | A+D+E | * | | |
| Infection with ovine rinderpest (commonly known as PPR, peste des petits ruminants) | Never been detected in the Netherlands. | A+D+E | * | | |
| Infection with Rift Valley fever virus (RVF) | Never been detected in the Netherlands. | A+D+E | * | | |
| Sheep pox and goat pox | Multiple outbreaks detected at sheep farms in Spain from September 2022. All sheep at the affected farms were culled. Never been detected in the Netherlands. | A+D+E | * | * | |
| Articles 2.1.a and 2.1.b Designation of animal diseases 'Rules for Animal Health'/Implementing Regulation (EU) 2018/1882 of the Animal Health Law (EU) 2016/429 (Category B through E) | | | | | |
| Infection with <i>Brucella abortus</i> , <i>B. melitensis</i> | The numbers for the 2022 random samples have been achieved. All results were negative. The Netherlands therefore retains its BTV-free status. | B+D+E | * | | |
| Infection with the rabies virus | Extremely rarely diagnosed in bats. | B+D+E | | | |
| Infection with the bluetongue virus (serotypes 1-29) | The Netherlands has been officially free from BT since 2012. There are multiple sources of BT within Europe. The Netherlands borders the monitored regions of Germany and Belgium. BTV-1, 3 and 4 outbreaks reported in the Mediterranean region. | C+D+E | * | | |
| Epididymitis in sheep (<i>Brucella ovis</i>) | Examination of rams for export purposes. | D+E | * | | |
| Infection with Mycobacterium tuberculosis- complex (<i>M. bovis</i> , <i>M. caprae</i> , <i>M. tuberculosis</i>) | The Netherlands has been officially free from Bovine tuberculosis since 1999. | D+E | * | | |
| Anthrax (<i>Bacillus anthracis</i>) | Last registered outbreak in cattle in 1993. No infections registered since then. | D+E | * | | |
| Paratuberculosis (<i>Mycobacterium avium subs. paratuberculosis</i>) | Regular cases especially in (dairy) goats and occasionally in sheep. | E | * | | |
| Q fever (<i>Coxiella burnetii</i>) | In 2016, the final dairy goat farm was certified free from infection with <i>C. burnetii</i> . | E | * | | |
| Echinococcosis | No confirmed cases in recent years. | | * | | |
| Trichinellosis | No known cases of trichinellosis in sheep or goats. | | * | | |

| Disease/disorder/health characteristic | Brief description | Category | Quiet ¹ | Increased attention ² | Further investigation ³ |
|---|--|----------|--------------------|----------------------------------|--|
| Article 2.1.c Designation of animal diseases 'Rules for Animal Health' of the Dutch Animal Act | | | | | |
| Transferable TSEs (scrapie, BSE) | Hardly any cases among sheep in the past ten years. A non-ARR/ARR genotype was recently found in sheep, whose blood lines would suggest otherwise. The case was examined in more detail, and seems to derive from a ram which does not appear to have the ARR/ARR genotype. In goats, the first case of scrapie was in 2000 and the last case in 2001. | | * | | |
| Article 3a.1 Reporting of zoonoses 'Rules for Animal Husbandry' of the Dutch Animal Act | | | | | |
| Campylobacteriosis (<i>Campylobacter spp.</i>) | A few cases each year. Particularly known as a cause of abortion in small ruminants. | | * | | |
| Leptospirosis (<i>Leptospira Hardjo</i>) | No cases diagnosed in sheep or goats for many years. | | * | | |
| Listeriosis (<i>Listeria spp.</i>) | Encephalitis caused by <i>Listeria monocytogenes</i> is regularly found in sheep, but especially in dairy goats. Problems caused by listeriosis are reported at a number of dairy goat farms each year. It is unknown how long listeria bacteria are excreted into the milk. Both <i>L. monocytogenes</i> and <i>L. ivanovii</i> can cause abortion in sheep and goats. | | * | | *Further investigation is required into the types found in people and animals. |
| Salmonellosis (<i>Salmonella spp.</i>) | Since 2016, there have been recurrent and large-scale losses of kids at dairy goat farms, caused by a multiresistant <i>S. Typhimurium</i> . There also were multiple cases of illness in people caused by the same MLVA strain of the bacterium. The infection source is unknown; it is also unknown where the bacteria exist outside the kidding season. In order to establish the prevalence of salmonellosis at dairy goat farms, samples have been submitted for testing over the past two years; 52 percent of the Dutch dairy goat farming sector participated. In 2023, a programme will possibly be tested at thirty farms. | | * | | * A further study of dairy goats is underway within the framework of public private collaboration on increased sustainability of dairy goat farming. |
| Yersiniosis (<i>Yersinia spp.</i>) | A number of cases per year identified as the cause of diarrhoea, mortality and abortion. | | * | | |
| Toxoplasmosis (<i>Toxoplasma gondii</i>) | A few confirmed cases per year, but probably one of the most commonly occurring causes of abortion. High seroprevalence has previously been shown in sheep and goats. | | * | | |

Table continuation

| Disease/disorder/health characteristic | Brief description | Category | Quiet ¹ | Increased attention ² | Further investigation ³ |
|---|--|----------|--------------------|----------------------------------|------------------------------------|
| Other OIE list diseases | | | | | |
| Enzootic abortion (<i>Chlamydia abortus</i>) | One of the main causes of abortion in goats and sheep for years. | | * | | |
| Caprine arthritis encephalitis (CAE) | Commonly occurring disease whereby the pathogenic virus sometimes behaves differently depending on the size of the farm. Source of introduction not always clear. | | * | | |
| Maedi/visna virus (MVV) | (Most) significant infectious disease at large sheep farms. | | * | | |
| Tularemia (<i>Francisella tularensis</i>) | Since 2011, infected hares are regularly found, as well as a few human tularemia patients in the Netherlands. | | * | | |
| <i>Mycoplasma agalactiae</i> | Never been detected in the Netherlands. | | * | | |
| Nairobi sheep disease | Never been detected in the Netherlands. | | * | | |
| Heartwater (<i>Ehrlichia ruminantium</i>) | Never been detected in the Netherlands. | | * | | |
| Infections with the Schmallenberg virus (SBV) | Annual infections with the SBV since 2011, resulting in congenital abnormalities in lambs. Also various notifications of lambs showing congenital abnormalities caused by SBV, in early 2022. Exclusion of other possible causes of lambs with congenital abnormalities in keeping with SBV is important for early detection of introduction of other viruses from the Bunyaviridae group. | | | * | |
| From monitoring | | | | | |
| Caseous lymphadenitis (CL) | Outbreaks of CL at four previously CL-certified dairy goat farms. The cause of these infections is unknown as yet. | | | * | |
| Copper accumulation in dairy kids | Copper accumulation in young animals is largely due to the individual farms. Monitoring of copper accumulation is essential in order to prevent the development of toxic values. | | | * | |
| Lameness following injection with Draxxin® | Since 2020, a number of cases of lameness in sheep and goats have been reported following the use of Draxxin®. | | | * | |

¹ Quiet: no action required or action is not expected to result in a clear improvement.

² Increased attention: alert to an anomaly.

³ Further investigation: further investigation is ongoing or required.



Animal health monitoring

Royal GD has been responsible for animal health monitoring in the Netherlands since 2002, in close collaboration with the veterinary sectors, the business community, the Ministry of Agriculture, Nature and Food Quality, veterinarians and farmers. The information used for the surveillance programme is gathered in various ways, whereby the initiative comes in part from vets and farmers, and partly from Royal GD. This information is fully interpreted to achieve the objectives of the surveillance programme – rapid identification of health issues on the one hand and monitoring trends and developments on the other. Together, we team up for animal health, in the interests of animals, their owners and society at large.