Monitoring ANIMAL HEALTH

Small Ruminants | May 2022

# Attention when using Neocidol®

At a sheep farm of 50 sheep, 45 animals died following treatment with Neocidol©, which had been used to treat the herd against scabies. Scabies infections can be extremely persistent in sheep. The results of treatment are often disappointing. The best results are achieved after dipping sheep in a solution of medication registered for that purpose. Neocidol© is a commonly used agent that contains diazinone, a substance which affects the nervous system of insects and arachnids, including mites. Diazinone can also affect the working of the nervous system in mammals, including humans, it is also irritating to the skin and eyes. Compounds containing diazinone must therefore be used with the appropriate personal protective equipment in a well ventilated space. In this case the animals were brought into the barn to dry following treatment. The lack of ventilation is very probably what killed these animals.

# Chlamydia as a cause of abortion in sheep and goats

Chlamydiosis or enzootic abortion is caused by the *Chlamydia abortus* bacteria, one of the main causes of infectious abortion in north-west Europe. *C. abortus* results in infection of the placenta. Abortion caused by *C. abortus* generally occurs during the final weeks of gestation. Clinical signs are rarely seen in the ewe or doe. Aborted lambs do not initially show any signs of abnormalities. The placenta however will show signs of infection to one extent or another. In some cases, lambs are born alive despite the infected placenta. These lambs are often weak and do not survive longer than a few days.

In the Netherlands too, chlamydia is one of the main infectious causes of abortion in both the hobby sector and at professional farms. The bacteria is generally introduced to farms through the introduction of infected female breeding stock. Once the bacteria has been introduced to a farm, it is extremely difficult to eradicate it. Various test methods are available in order to arrive at a diagnosis in case of a suspected infection. Chlamydiosis is a zoonosis.

# Submitting foetus and placenta important for diagnosis of abortion

Abortion is a commonly occurring problem in small ruminants and the aborted foetus and placenta must be examined in order to arrive at a diagnosis. When submitting part of a placenta, it is important that this part contains cotyledons. 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.

# Abnormal lambs due to the Schmallenberg virus

From November 2021 on, the Veekijker received notifications of lambs being born with congenital abnormalities. Some of these lambs submitted for pathological examination have been found to be infected with the Schmallenberg virus (SBV). The congenital abnormalities mainly concerned congenital skeletal abnormalities and an abnormal development of the central nervous system. SBV is an orthobunyaviruses and is spread by midges. Abnormalities can occur in lambs when the infection occurs between day 25 and day 60 of the gestation period. The birth of deformed lambs depends on the occurrence of midges, the degree of infection in the midges and the immunity of the maternal animal. The risk of deformed lambs decreases as the lambing season progresses. Many farmers are familiar with the signs which indicate infection with the SBV. However, it remains important to examine lambs born with congenital abnormalities, especially because the signs are not specific to an infection with the SBV. An example of a virus that can result in comparable congenital abnormalities in lambs is Cache Valley virus. This virus is also a zoonotic agent. Lambs with congenital malformations often need assistance with delivery, however, care must be taken to avoid damaging the ewe.

# CL detected in imported sheep

In autumn 2021, a veterinarian contacted GD due to suspicion of caseous lymphadenitis (CL). A number of sheep had abscesses and scarring from previously burst abscesses on their heads. To confirm this suspicion, a sheep with clinical signs was submitted for pathological examination. *Corynebacterium pseudotuberculosis* was cultivated from abscessed lymph glands. Further analysis by the Dutch National Institute for Public Health and the Environment (RIVM) confirmed the diagnosis of CL.
Following this finding, GD visited the farm concerned. This was a herd of 146 sheep imported from Germany in October 2021, which had since been grazing outdoors at a dairy farm. The imported animals were kept separate from the own sheep, though they were transported using the same means of transport without suitable cleaning and disinfection.
There were no signs of swollen lymph glands during the farm visit, though three sheep had a number of random scars on their heads. These sheep did not have swollen lymph glands. During inspection and palpation, it became clear that a lymph gland palpation is not easy to conduct on animals with a thick wool coat.
On discussing the situation with the sheep farmer, it became apparent that the trader from whom he had purchased the imported sheep has imported a total of 600 sheep from a single farm. The location of the other animals is unknown, nor whether this herd is infected with CL. CL has been detected in imported sheep on numerous occasions in recent years. It is important that sheep farmers that want to import animals are aware of the prevalence of CL in surrounding countries.
During the visit, the nature of CL was explained, that it is a zoonosis and that when animals are submitted for slaughter, GD recommends that the finding are noted on the VKI (food chain information) form.

# CODD very likely following import from the UK

A number of sheep were submitted for pathological examination in January 2022 after a veterinarian had diagnosed severe lameness in a herd of lambs imported from the United Kingdom. Besides extensive ecthyma on the head and legs, a number of animals also presented with complete exungulation of one or more hooves. Histological examination detected separation of the hoof wall and the stratum spinosum. Special testing showed spirochaetes to be present in the affected skin parts. The combination of the clinical and histological presentation, a negative PCR for *Dichelobacter nodosus* and the lack of other (an)aerobic bacteria suggests the likelihood of contagious ovine digital dermatitis (CODD). CODD was first described in sheep in 1997 in the United Kingdom, but there have been little or no reports of it in other countries since then. Further investigation has shown this disease to have quickly spread around the country, now causing problems at many farms in the United Kingdom. CODD tends to start as an infection of the coronet followed by progressive undermining and separation of the hoof wall. The cause of this hoof disease is not yet entirely clear. In many cases of CODD, *Treponema* spp. is found, which results in Mortellaro's disease in cattle. However, it is as yet unclear to what extent these *Treponema* spp. are the primary pathogens. In the case of sheep, the roles played by *D. nodosus* and *F. necrophorum* in particular is also unclear. The clinical presentation is dramatic and results in severe welfare deficiency. Affected animals are severely lame and can therefore no longer keep up with the herd. They become emaciated and may even die. If the animals recover, this often takes months. Due to the lack of clarity regarding the cause of the disease, introduction of this hoof disease must be prevented by applying lengthy and strict quarantine measures in the event of import.

# *Rhodococcus equi* detected in dairy goat lamb

At a dairy goat farm presenting runts in breeding goats, necropsy on one of the goats demonstrating typical signs showed both the lungs and liver to contain granulomatous abscesses, while bacteriological examination showed the lesions to have been caused by *Rhodococcus equi*. This bacterium is mainly known as the cause of severe pneumonia with the formation of abscesses, occasionally with gastroenteritis and high mortality rates among foals aged 1 to 4 months old, though the literature also describes cases in pigs, cattle, sheep, goats, alpacas and humans, though to a lesser extent. *Rhodococcus equi* is an ambient bacterium. Inhalation of dust particles containing *R. equi* is the main cause of infection, alongside infection from soil. The only infections described in goats are those in animals with suppressed immunity. There have been no signs of infection with *R. equi* in subsequent necropsies of goats from the same herd.

# Animal health barometer Small Ruminants

| Veterinary diseases | 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) (*Mycoplasma capricolum subs. capripneumoniae*) | Has never been present in NL. | 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) | Has never been present in NL. | A+D+E | * | | |
| Infection with Rift Valley fever virus (RVF) | Has never been present in NL. | A+D+E | * | | |
| Sheep pox and goat pox | Has never been present in NL. | 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 *Brucella abortus, B. melitensis* | Based on a random sample in 2021, the Netherlands maintains its free status. Action has already been taken for the 2022 random sample. | 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 a number of sources of BT within Europe. BTV-8 is found in Germany, Luxembourg and Belgium, for example. Many outbreaks of BTV-4 around the Mediterranean. | C+D+E | * | | |
| Epididymitis in sheep (*Brucella ovis*) | Examination of rams for export purposes. | D+E | * | | |
| Infection with *Mycobacterium tuberculosis- complex (M. bovis, M. caprae, M. tuberculosis)* | The Netherlands has been officially free from bovine tuberculosis since 1999. | D+E | * | | |
| Anthrax *(Bacillus anthracis)* | Last registered outbreak in cattle in 1993. No infections registered since then. | D+E | * | | |
| Paratuberculosis (*Mycobacterium avium subs. paratuberculosis*) | Regular cases especially in dairy goats and occasionally in sheep. | E | * | | |
| Q fever (*Coxiella burnetii)* | In 2016, the final dairy goat farm was certified free from infection with *Coxiella burnetii.* | E | * | | |
| Echinococcosis | No confirmed cases in recent years. | | * | | |
| Trichinellosis | No known cases of trichinellosis in sheep or goats. | | * | | |

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Table continuation

| Veterinary diseases | 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 10 years. In the annual random sampling by GD, all the rams examined had the required 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 *(Campylobacter spp.)* | A few cases each year. | | * | | |
| Leptospirosis *(Leptospia Hardjo)* | No cases in sheep or goats for many years. | | * | | |
| Listeriosis *(Listeria spp.)* | Encephalitis caused by *Listeria monocytogenes* is regularly found in sheep but especially in dairy goats. It is unknown how long listeria bacteria are excreted into the milk. Both *L. monocytogenes* and *L. ivanovii* can cause abortion in sheep and goats. | | * | | * Further investigation is required into the types found in people and animals. |
| Salmonellosis *(Salmonella* spp.*)* | Since 2016, recurrent and large-scale losses of kids at dairy goat farms caused by a multiresistant *S.* Typhimurium Also a number of cases of illness in people caused by the same MLVA strain of the bacteria. The infection source is unknown; it is also unknown where the bacteria exist outside the kidding season. | | * | | * A further study of dairy goats is underway within the framework of public private collaboration on increased sustainability of dairy goat farming. |
| Yersiniosis (*Yersinia spp.)* | A few cases each year. Identified as the cause of diarrhoea, mortality and abortion. | | * | | |
| Toxoplasmosis (*Toxoplasma gondii)* | A number of 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. | | * | | |
| **Other OIE list diseases** | | | | | |
| Enzootic abortion *(Chlamydia abortus)* | 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. | | * | | |
| Maedi-Visna virus (MVV) | (Most) significant infectious disease at large farms. | | * | | |
| Tularaemia *(Francisella tularensis)* | Since 2011 infected hares are regularly detected, and a few human tularaemia patients in the Netherlands. | | * | | |
| Mycoplasma agalactiae | Has never been present in NL. | | * | | |
| Nairobi sheep disease | Has never been present in NL. | | * | | |
| Heartwater *(Ehrlichia ruminantium)* | Has never been present in NL. | | * | | |
| 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. | | | * | |

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*Table continuation*

| Veterinary diseases | Brief description | Category | Quiet[1] | Increased attention[2] | Further investigation[3] |
|---|---|---|---|---|---|
| **From monitoring** | | | | | |
| Distomatosis (liver fluke) (*Fasciola hepatica)* | Multiple necropsies showing distomatosis in autumn 2021 and spring 2022. The national working group for liver fluke prognosis was disbanded in 2019. There is therefore no overview of prevalence of liver fluke infections and resistance to agents. Alertness to liver fluke infections is therefore advised. | | | * | |
| Caseous lymfadenitis (CL) *(Corynebacterium pseudotuberculosis)* | Outbreak of CL in a herd of Schoonebekers and Drentse Heide sheep. Due to frequent animal movements, the infection is probably not limited to this herd. | | | * | |
| Multiresistant *E. coli* | The presence of multiresistant *E. coli* at a dairy goat farm results in problems and losses during breeding. | | | * | |
| Contagious ovine digital dermatitis (CODD) | Severe lameness in sheep resulting in exungulation. Unclear role of *Treponema* spp. Present in the UK. Detected in a herd of imported sheep. | | | * | |

Monitoring ANIMAL HEALTH

## Animal health monitoring

Since 2002, Royal GD has been responsible for animal health monitoring in the Netherlands, in close collaboration with the veterinary sectors, the business community, the Ministry of Agriculture, Nature and Food Quality, vets 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.

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