

Monitoring

ANIMAL HEALTH



Photosensitivity in sheep

Since 2019, multiple cases of photosensitivity in sheep caused by sporidesmin are reported in the Netherlands. Sporidesmin, is liver toxic and is formed by the fungus *Pithomyces chartarum*, which is formed by the *Pithomyces chartarum*, which flourishes on dead plant material. The current drought has resulted in extremely favourable conditions for this mould to be

able to grow. The risk of photosensitivity occurring will certainly increase if the autumn is just as humid as previous years. GD warns sheep farmers and veterinarians to be alert on clinical signs of photosensitivity coming autumn. To confirm the diagnosis, further testing is recommended.



ENTV in a three-year-old ram

In 2018, we informed you as follows: A nasal tumour was diagnosed in a sheep submitted for pathological examination. Nasal tumours (adenocarcinoma) in sheep may be caused by a virus. In order to determine whether this was the case, samples of the tumour were sent to the Moredun Research Institute in Scotland for further examination. This examination showed that the tumour was indeed caused by a virus; further investigation of this virus was initiated. The farm was visited in order to inspect the animals. According to the farmer, another animal had previously presented the same clinical signs. Such tumours are generally not found in animals younger than two years. In a flock presenting this problem, generally not many animals are affected. As the disease has a viral source, and can spread via contaminated aerosols, measures need to be taken in order to prevent spread further spreading. During the farm visit by GD, the sheep farmer indicated that the sheep had been born at the farm in 2016. Rams had been imported from Germany in 2015. He also informed us that another sheep born in 2016 had already died in 2018, and that he could not exclude that the animal had suffered from

the same disease, in hindsight. The flock was inspected during the visit. No suspect animals were seen. It was agreed that the farmer would contact GD if any abnormalities became visible in the flock. GD also advised avoiding any contact with other sheep, and not selling any live animals. In 2018, there were no reliable tests available for screening of this virus in live sheep."

A veterinarian recently contacted the Veekijker regarding a ram suspected to have a nasal tumour. The animal had been repeatedly treated with antibiotics, and when that did not solve the problem, it was decided to submit the ram for pathological examination. A tumour was indeed diagnosed in the ethmoid bone. Due to the possibility of a viral background, a tissue sample was submitted to the Moredun Research Institution for confirmation purposes, where the suspicion of an infection with the enzootic nasal tumour virus (ENTV) was indeed confirmed. A GD veterinarian then visited the farm. On discussing the situation, there was no clear source of the infection. The ram had been born at the farm and this

farm does not import any animals. The farm does however regularly sell rams for breeding purposes. This type of viral tumour had previously been found in a flock of grazing sheep. There does not seem to be a relationship between the two farms where ENTV was diagnosed. During the farm visit, no clinical signs were observed in the other members of the flock of the ram diagnosed with the tumour. It was agreed that the farmer would contact GD in the event of any new suspected cases. As in 2018, GD also advised avoiding any contact with other sheep, and not selling any live animals. ENTV is not subject to compulsory notification or reporting and as such, the advice given to the sheep farmer is nonobligatory.

Udder abscesses in dairy goats

In May, a veterinarian contacted the Veekijker after multiple gestating yearlings had developed abnormalities of the udder within a short period of time. Multiple large abscesses were visible in the udders. Pathological examination of one of the goats indicated a severe chronic inflammation reaction of the teat and necrosis of the

epithelia, as well as extensive scarring of the teat canal. The udder skin showed signs of udder cleft dermatitis resulting from an infection with *Trueperella pyogenes*. *Bacterioides pyogenes* was cultured from the abscesses, which is a strictly anaerobic bacterium and part of the intestinal flora. Injuries to the teats or udder are

predisposing factors for the development of mastitis. Furthermore, this form of mastitis presents more severely in glandular tissue of non-lactating animals. If abscesses have formed, the goats will need to be disposed of in most cases.

Increased risk of intoxication due to drought

The continuing drought has resulted in many trees prematurely shedding leaves and fruit. Excessive ingestion of these fruits can negatively affect the health of small ruminants.

Pome fruit such as apples and pears, generally contain a high volume of sugars. When ingested in sufficient quantities, the fruits can result in malfunctioning of the rumen. In severe cases, the animals die within few hours. In more chronic cases, the animals become lethargic, with loss of appetite, and can develop lameness. If rumen acidosis is diagnosed, it is important that animals are offered quality roughage and

that concentrated feed is withheld temporarily until the rumen is functioning properly again. Pain medication and sufficient fresh drinking water aids recovery.

Young oak leaves and acorns contain the chemical substance known as tannin. As the acorns ripen, the concentration of tannin decreases. Intoxication due to ingestion of (green) acorns is a regular diagnosis among small ruminants. The ingestion of a few acorns is generally not an issue, but large quantities of green acorns in particular can result in clinical signs of intoxication due to their tannins. In situations in which large volumes of acorns are available, in

combination with a limited grass cover on the land, the risk of ingestion of (too many) acorns will increase. The clinical signs of intoxication include abnormal behaviour, sometimes also a nervous disposition and gastrointestinal issues. Seriously affected animals will generally not survive. The treatment of animals who have ingested toxic plants or plant components is complicated and radical. It is therefore extremely important to prevent intoxication by toxic plants. GD advises that animals are kept from grazing under fruit and oak trees during high-risk periods.

CCN in young goats likely result of salt intoxication

At the end of July, a five-month-old kid was submitted for pathological examination. The animal demonstrated an abnormal gait and died within 24 hours after clinical signs becoming apparent. Pathological examination showed dry contents of the forestomach, alongside the symptoms of cerebrocortical necrosis (CCN). The cerebrum demonstrated acute necrosis in the various laminae. A limited degree of round-cell meningitis and perivascular cuffing was also seen, with multiple diffuse eosinophilic granulocytes. Despite other causes of CCN not being excluded, this combination of findings suggests salt intoxication.

Salt intoxication can occur either directly or indirectly. Direct salt intoxication is the result of excessive ingestion of NaCl (kitchen salt), whereas indirect salt intoxication only requires the consumption of normal volumes of NaCl in combination with a lack of drinking water. In both cases, the osmolarity in the brain cells increases, resulting in oedema, which eventually causes CCN. In swine, the signs of eosinophilic meningitis in combination with CCN is pathognomonic of salt intoxication. Histologically speaking, no distinction can be made between the two forms of salt intoxication. An indirect form of salt

intoxication is generally only seen in ruminants following extended water deprivation, as the rumen is capable of temporarily compensating fluctuations in the fluid content. In dairy goat farming however, it is not unusual to feed additional nutrients in the form of salts (bicarbonate, mineral mixes) to prevent rumen acidosis or to improve feed conversion. Besides the fact that the structural use of such salts may be questionable, the provision of easily accessible and sufficiently clean and fresh drinking water is essential.

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>)	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 <i>Brucella abortus</i> , <i>B. melitensis</i>	Based on a random sample in 2021, the Netherlands maintains its free status. The 2022 random sample is ongoing.	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-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 <i>Mycobacterium tuberculosis</i> - 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</i> subs. <i>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>Coxiella burnetii</i> .	E	*		
Echinococcosis	No confirmed cases in recent years.		*		
Trichinellosis	No known cases of trichinellosis in sheep or goats.		*		
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. In the annual random sampling by GD in 2021, all the rams examined had the required genotype. A non-ARR/ARR genotype was recently found in sheep, whose blood lines would suggest otherwise. The case is being investigated further. In goats, the first case of scrapie was in 2000 and the last case in 2001.		*		*

Disease/disorder/health characteristic	Brief description	Category	Quiet ¹	Increased attention ²	Further investigation ³
Article 3a.1 Reporting of zoonoses 'Rules for Animal Husbandry' of the Dutch Animal Act					
Campylobacteriosis (<i>Campylobacter</i> spp.)	A few cases each year. Particularly known as a cause of abortion in small ruminants.		*		
Leptospirosis (<i>Leptospira</i> Hardjo)	No cases in sheep or goats for many years.		*		
Listeriosis (<i>Listeria</i> spp.)	Encephalitis caused by <i>Listeria monocytogenes</i> is regularly found in sheep but especially in dairy goats. It is unknown how long <i>listeria</i> 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</i> spp.)	Since 2016, recurrent and large-scale losses of kids at multiple dairy goat farms caused by a multiresistant <i>S. Typhimurium</i> . Also 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. During the inventory into the prevalence of Salmonellosis in dairy goat farming, 52% of the farms have submitted samples for testing over the past two years.		*		* 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</i> spp.)	A few cases each 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.		*		
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.		*		

Table continuation

Disease/disorder/health characteristic	Brief description	Category	Quiet ¹	Increased attention ²	Further investigation ³
Other OIE list diseases					
<i>Mycoplasma agalactiae</i>	Has never been present in NL.		*		
Nairobi sheep disease	Has never been present in NL.		*		
Heartwater (<i>Ehrlichia ruminantium</i>)	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.			*	
From monitoring					
Haemonchosis	Haemonchosis increasingly occurs outside the “appropriate period”. Anthelmintic resistance is cause for concern. Effective (pasture) management is very important within the scope of preventing clinical signs and delaying resistance development.			*	
Distomatosis (liver fluke) (<i>Fasciola hepatica</i>)	In the autumn of 2021 and spring of 2022, the Veekijker has received multiple notifications of liver fluke infections, and of resistance to treatment. Since the discontinuation of the liver fluke prognosis working group, there is no longer insight into the risk of infection and the prevalence of resistance. We continue to advise alertness to liver fluke.			*	
Photosensitivity due to sporidesmin	The current drought has produced ideal conditions for the growth of <i>Pithomyces chartarum</i> . Alertness is advised in the coming months.			*	
Enzootic nasal tumour virus (ENTV)	ENTV once again diagnosed in a sheep. This would not seem to be related to a previous case in 2018.			*	
Caseous lymphadenitis (CL)	Outbreaks of CL at two dairy goat farms. The cause of these infections is unknown as yet.			*	
Chronic copper intoxication in goat kids	Toxically relevant liver copper values are regularly found in breeding kids. Nutrition plays an important role in the absorption of copper. The specific nature of this role is not yet entirely clear.			*	* Further investigation has been initiated by GD for inventory of copper accumulation in young kids

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

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.