

Monitoring

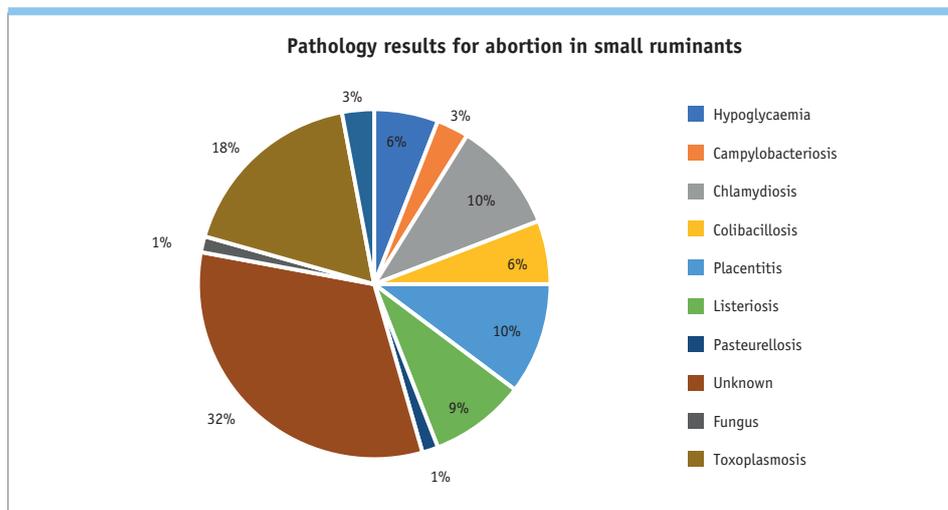
ANIMAL HEALTH



Abortion status in small ruminants

Every year, GD conducts pathological examinations of 100 to 150 aborted or stillborn lambs. Abortion, premature births, stillborn and weak lambs can have infectious and non-infectious causes. The main pathogens of abortion in the Netherlands are *Listeria* spp., *Campylobacter* spp., *Chlamydia* spp. and *Toxoplasma gondii*. The number of animals submitted for abortion diagnostics is not representative of the population of small ruminants in the Netherlands. Since 2022, monitoring of abortion in small ruminants has been extended, by giving selected farms as part of the monitoring of *Brucella melitensis* the possibility of one-off, low threshold abortion diagnostics free of charge, when the farmer is confronted with

abortion. 50 farmers made use of this option last spring. The contribution made by this supplementary monitoring to awareness and familiarity with zoonoses has become apparent from the fact that farmers contact the Veekijker to discuss the results. In one or two cases, the Veekijker was approached following a confirmed submission of *Yersinia pseudotuberculosis*. The sheep farmers concerned requested information because their wife was pregnant. Abortion in sheep and goats is governed by legislation (see www.nvwa.nl).



Reporting the birth of excessive single lambs at sheep farms

In the spring of 2023, various sheep farmers reported the birth of too many single lambs at their farm. They did not report any other problems, such as excessive re-servicing, abortion, stillborn or weak lambs, or excessive numbers of dry pregnant ewes. It is known that in the period before the breeding period nutrition plays a role in the number of egg cells released. The weather conditions

during the summer months may also have played a role in the issues reported this spring. As copper deficiency can also influence the fertility of sheep, it is important to exclude that as a possible cause.

Neurological symptoms in spring

Last spring, the Veekijker frequently received calls from farmers and veterinarians regarding neurological symptoms in adult sheep and goats around the lambing/kidding period. The neurological symptoms described ranged from an unstable gait, inability to stand, circling and eventually death. Diseases which spring to mind in this period

include mastitis, extended milk fever, listeriosis, enterotoxaemia and grass tetany. It is often challenging to determine the cause in a living animal, as there are limited diagnostic possibilities. In several cases, pathological examination turned out to be essential in making a diagnosis. Following feedback, listeriosis was found to be the

cause of the problems in a few cases, where a metabolic disease was initially expected. If neurological symptoms are seen throughout the flock or animals do not respond to the administered therapy, pathological examination may be decisive.

Questions regarding foot rot in sheep and lambs

In spring, the Veekijker received several questions regarding the best approach to foot rot in sheep and lambs. Dealing with foot rot requires considerable effort from the farmer and foot rot is therefore best dealt with when the flock is as small as possible. However, in case of an outbreak among sheep and lambs, a plan of action will have to be drawn up.

Foot rot is caused by *Dichelobacter nodosus* in combination with *Fusobacterium*

neecrophorum. Affected animals will display lameness to varying degrees as a result of interdigital dermatitis. Dealing with foot rot requires a comprehensive approach. Important aspects include splitting the flock (into affected and unaffected animals), treating affected animals, foot baths, disposal of possible carrier animals, animals repeatedly showing symptoms of foot rot and vaccination. Once a farm is free of foot rot, it is important to prevent reintroduction. The

most likely route of introduction is through the purchase of infected animals, but the bacteria can also be introduced through indirect contact. It is important to quarantine purchased animals and carefully inspect and treat their hooves.

Rumen problems in young kids and lambs

Pathological examination identified rumen problems in multiple dairy goat kids and an occasional lamb submitted last spring. These problems concerned abnormal stomach evacuation, extreme gas formation, irritation and inflammation of the rumen wall, and in severe cases, complete perforation of the

rumen. Bacteria such as *Streptococcus bovis* and *Sarcina* spp. are frequently found in relation to such symptoms, and indicate dysbacteriosis in the gut. Such findings are almost always secondary to abnormal feed intake or feed composition, and require a critical evaluation of feed management.

When it results in mortality of young kids or lambs, in addition to pathological examination, it is also important to critically monitor management factors that may affect the health of young animals.

Black leg following prostaglandin injection in goats

Black leg malignant oedema and gas gangrene are characterised by comparable clinical signs, with haemorrhagic, necrotising and emphysematous inflammation of the muscles and subcutis. These diseases are caused by various *Clostridium* spp. (*C. chauvoei*, *C. novyi*, *C. septicum* or sporadically *Paenoclostridium sordellii*). Traces of *Clostridium* spp. can survive well in the environment. Contamination of wounds or

the use of dirty injection needles form a risk for the development of black leg. Moreover, traces of this bacterium can remain latent in muscle tissue following oral ingestion. These can then be activated by tissue damage and hypoxia, which can occur following administration of an injection for example, or due to local trauma. In April, GD received a submission from a dairy goat farm at which black leg had been detected in multiple dairy

goats as a result of a *C. septicum* infection. The problems had arisen following treatment with a prostaglandin preparation used to treat pseudogestation. When treatment by injection is to be administered, it is important that the treatment takes place lege artis.

Alertness to liver fluke due to wet spring

Last spring, the Veekijker received several questions regarding liver fluke. During necropsy, multiple sheep were found to have abnormal livers due to chronic liver fluke infections. The Netherlands Food and Consumer Product Safety Authority (NVWA) also reported the regular occurrence of animals with diseased livers on the slaughter line.

Adult animals with liver fluke infections contaminate the soil in spring. This year's wet weather conditions offered favourable circumstances for continuation of the liver fluke cycle. There is no liver fluke without the liver fluke snail *Galba truncatula*. This

intermediate host lives wherever the soil remains moist for most of the year, such as in ditches, gullies, trodden ditch banks and seepage water areas behind dikes. The liver fluke snail is hardly affected by harsh winters, but it is susceptible to drought. When temperatures drop below 10 degrees Celsius, liver fluke cannot develop outside the host. Liver fluke eggs deposited in fields before May can develop into contagious cysts from August on, after multiplication in the liver fluke snail. Liver fluke infections mainly occur in the period from August to November. Contagious cysts can survive at low temperatures and sufficient moisture,

and therefore also cause infections in grazing animals during winter months. When a liver fluke infection is suspected, confirmation by means of pathological examination, blood tests or manure tests is essential before administering any treatment. An investigation of the incidence of the liver fluke snail on plots can help identify which plots are risky and should therefore be avoided during certain periods of the year. Scan the QR code for more information on diagnostics and preventive measures.

<https://www.gddiergezondheid.nl/nl/Diergezondheid/Dierziekten/Leverbot>

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	Never been detected in the Netherlands. Multiple outbreaks detected at sheep farms in Spain from September 2022 up to and including the spring of 2023. All sheep at the affected farms were culled.	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 free status. Monitoring has been re-initiated for 2023.	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	*		

Table continuation

Disease/disorder/health characteristic	Brief description	Category	Quiet ¹	Increased attention ²	Further investigation ³
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>C. burnetii</i> .	E	*		
Echinococcosis	An echinococcus bladder was detected during pathological examination of a sheep in April. The particular type is not known.		*		
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. A non-ARR/ARR genotype was found in sheep in 2022, 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</i> spp.)	A few cases each year. Particularly known as a cause of abortion in small ruminants.		*		
Leptospirosis (<i>Leptospira Hardjo</i>)	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. Problems caused by listeriosis are reported at a few dairy goat farms each year. It is unknown how long listeria bacteria are excreted into the milk. <i>Both L. monocytogenes and 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, 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. 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. 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</i> spp.)	A few cases each year. Identified as the cause of diarrhoea, mortality and abortion.		*		

Table continuation

Disease/disorder/health characteristic	Brief description	Category	Quiet ¹	Increased attention ²	Further investigation ³
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.		*		
<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 2023. 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					
Black leg	Loss of multiple dairy goats at a farm due to black leg following injection with prostaglandin.			*	
Copper accumulation in dairy kids	Copper accumulation in young animals is largely farm-dependent. Monitoring of copper accumulation is necessary to prevent development of toxic values.			*	
<i>Chlamydia abortus</i>	Chlamydia is an important cause of abortion at sheep and goat farms. Despite preventive measures, known infected farms also have problems with abortion caused by <i>C. abortus</i> . Chlamydiosis is a zoonosis.		*		
Enterotoxaemia	Multiple notifications of losses of sheep and lambs caused by enterotoxaemia after grazing in spring grass. Multiple submissions for pathological examination confirmed this diagnosis.				
Liver fluke	Liver fluke was diagnosed in sheep over the past winter months. High groundwater levels are a risk factor for liver fluke.			*	

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.